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OBSERVATIONS

ON THE

GENUS UNIO,

TOGETHER WITH

DESCRIPTIONS OF NEW SPECIES IN THE FAMILIES NAÏADES,
COLIMACEA, LYMNÆANA, MELANIANA
AND PERISTOMIANA.

WITH NUMEROUS PLATES.

BY

ISAAC LEA,

MEMBER OF THE AMERICAN PHILOSOPHICAL SOCIETY,
ETC. ETC.

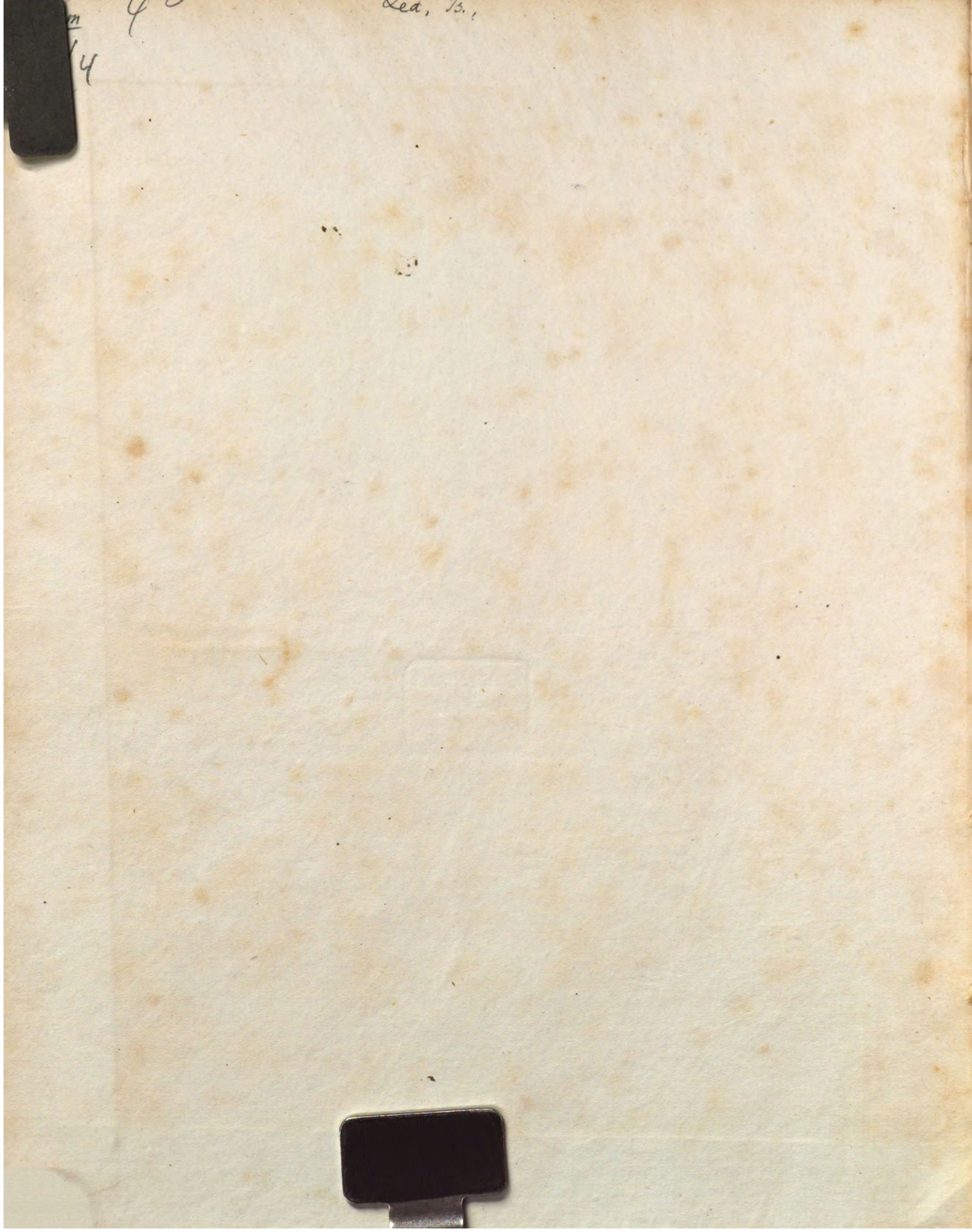
VOL. IV.

PHILADELPHIA:
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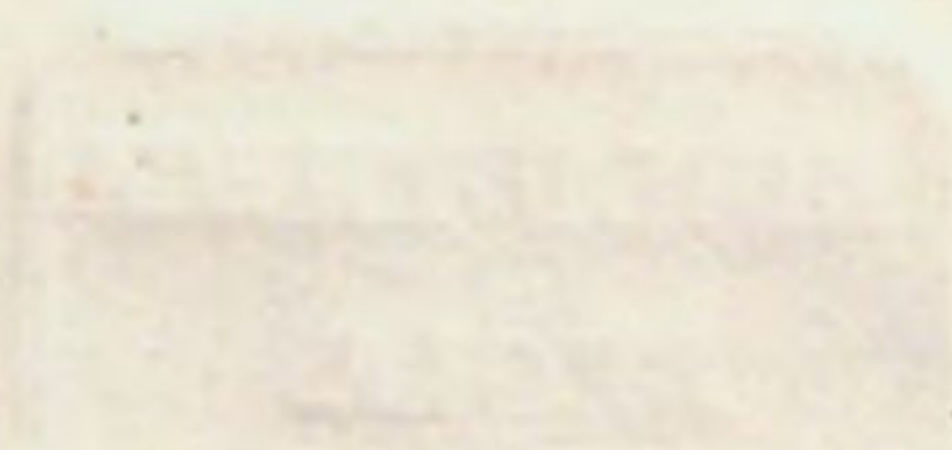
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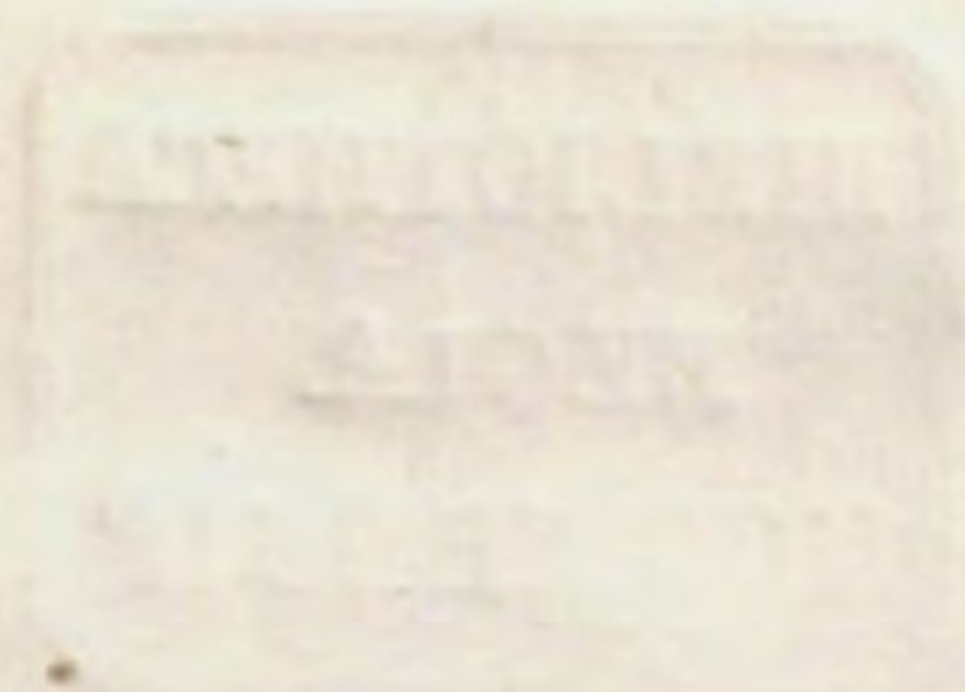
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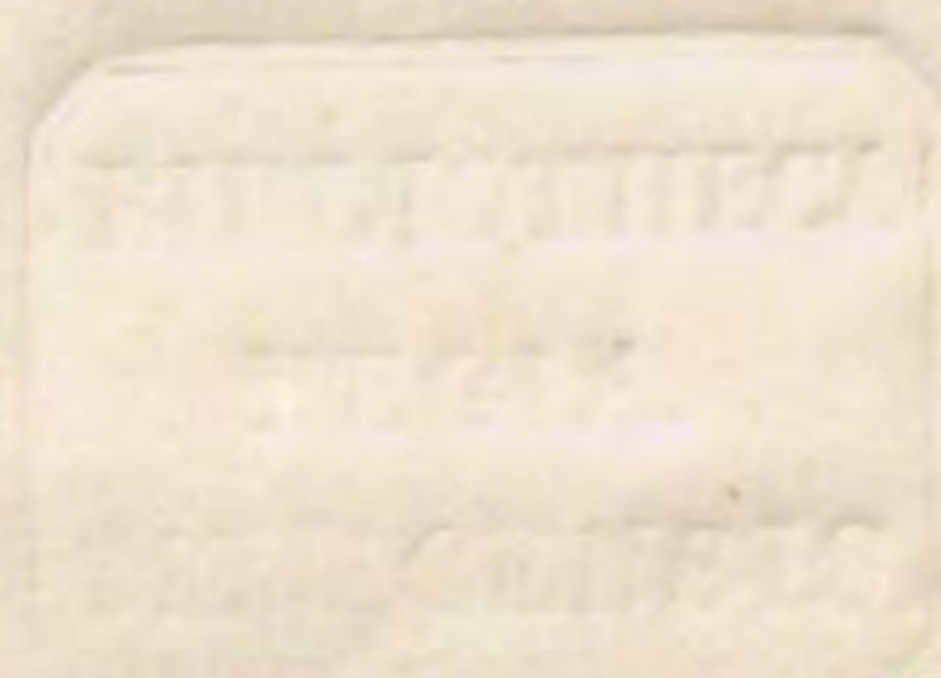


GENUS UNIO

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*Presented to the National Library
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by the Author*

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READ BEFORE THE AMERICAN PHILOSOPHICAL SOCIETY, AND ORIGINALLY
PUBLISHED IN ITS TRANSACTIONS.

WITH NUMEROUS PLATES.

BY ISAAC LEA,

MEMBER OF THE AM. PHIL. SOC.; OF THE ZOOLOGICAL SOC.
OF LONDON; OF THE IMPERIAL SOC. OF NAT.
HIST. OF MOSCOW; ETC. ETC.

VOL. IV.

PHILADELPHIA:
PRINTED FOR THE AUTHOR.

*Presented to the Museum of Natural History
of the University of California
by the author*

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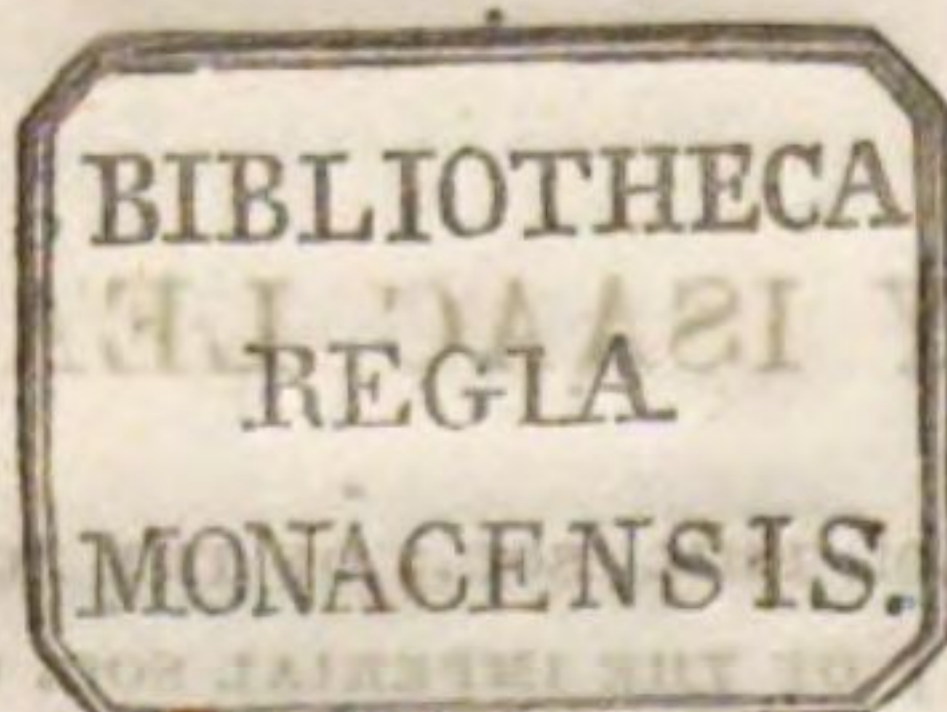
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TOGETHER WITH

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PHILADELPHIA:
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TO ISAAC HAYS, M. D.

MY DEAR FRIEND:

To you, who have been with me a co-labourer in the field of science for more than thirty years, I have often applied for the advantage of your judgment and experience. Permit me now to recall to your mind our old and friendly relations, and present to you this volume, which, although it will not add an idea to your extensive medical acquirements, may serve to remind you of a constant and sincere friend.

Most faithfully

Yours,

ISAAC LEA.

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TRANSACTIONS

OF

THE AMERICAN PHILOSOPHICAL SOCIETY.

ARTICLE I.

Continuation of Mr. Lea's Paper on Fresh Water and Land Shells. Read February 19, 1841.

HELIX & CAROCOLLA. (LAMARCK.)

THE genus *Helix* is widely scattered over the soil of the United States, and the same species have in many instances a very wide geographical range. Climatal influence is very evident in many species.—In some localities they are more inflated and larger; in others more depressed, even becoming *carinate* like the genus *Carocolla*. The uncertainty of this *carinate* character has induced me to hesitate in the admittance of the genus *Carocolla*, but the number of *Helices* is so great that a strong inducement is presented to preserve it for the present.

The *Helices* of the United States are nearly all of a dull horn colour, and in this respect not very attractive. Most of the species are, however, furnished with apertures differing much from each other, and presenting the most interesting characters as regards teeth, &c. Mr. Say has described thirty-nine species, and seventeen have been proposed by myself and other naturalists. To that number I propose now to add a single species, as well as one to the genus *Carocolla*.

HELIX TENNESSEENSIS.*

Testâ suprâ plano-convexâ, subtus convexâ, luteâ, obliquè striatâ, umbilicatâ; spirâ brevi; suturis subimpressis; anfractibus quinis, subconvexis; aperturâ lunatâ; labro intus incrassato.

Shell above plano-convex, beneath convex, yellow, obliquely striated, umbilicated; spire short; sutures somewhat impressed; whorls five, somewhat convex; aperture lunate; lip thickened within.

Hab. Cumberland Mountains, Tennessee. S. M. Edgar. My Cabinet, and Cabinet of Mr. Edgar. Diam. .45, Length .32 of an inch.

Remarks.—A species very nearly allied to *H. limbata*, Drap. It differs in having a wider umbilicus, a less expanded aperture, and having an indistinct brownish line on the periphery, the *limbata* having a white and very distinct one. The striae cover the whole

* It is regretted that the figures to illustrate the species of Mr. Lea's paper cannot now appear. It is hoped that they may be hereafter furnished.

surface of the shell, but are more distinct on the superior part. The thickening of the line within the edge of the lip gives a white band on the outside.

CAROCOLLA EDGARIANA.

Testâ suprâ subplanâ, subtus convexâ, rufo-fuscâ, enormiter striatâ, imperforatâ; spirâ brevi; suturis vix impressis; anfractibus quinis, planulatis; aperturâ angustissimâ; columellâ dentem unicum longum et laminatum habente; labro incrassato, in medio incisso.

Shell nearly flat above, beneath convex, reddish brown, irregularly striate, imperforate; spire short; sutures scarcely impressed; whorls five, flattened; aperture very narrow; columella furnished with a long lamellar tooth; lip thickened, in the middle notched.

Hab. Cumberland Mountains, Tennessee. S. M. Edgar. My Cabinet and Cabinets of Mr. Edgar and Dr. Troost. Diam. .40, Length .20 of an inch.

Remarks.—Among a number of *Helices* taken by Mr. Edgar were three specimens of this species, which do not seem to have been before observed. The carina is sharp. The form of the aperture that of *H. hirsuta*, (Say,) except that the superior and thick part of the lip joins the tooth of the columella. On the surface of the shell there is no hirsute character. Several specimens of the *hirsuta* accompanied them, all of which presented their usual subglobose character. It differs from *C. spinosa*, (nobis,) in being smaller, less flattened, and being without the cilia.

BULIMUS JAYANUS.

Testâ ovato-conicâ, crassâ, suprâ albidâ, subtus castanêâ, perforatâ; anfractibus senis, subconvexis; aperturâ ellipticâ; labro reflexo, albo, margine lineato; columellâ albâ, lævi.

Shell ovately conical, thick, whitish above, chestnut colour below, perforate; whorls six, somewhat convex; aperture elliptical; lip reflected, white, margin lineate; columella white, smooth.

Hab. Java? My Cabinet and Cabinet of Dr. Jay. Diam. .1, Length, 1.9 of an inch.

Remarks.—This species was purchased of a dealer who informed me that it came from Java. It is remarkable for the distinct division of the colour on the middle of the lower whorl, the superior part being whitish with distinct longitudinal brown striæ and spots below the sutures, which are very small. The perforation is very small, and around it the colour is lighter. The chestnut colour of the lower part is visible in the interior, and on the white lip forms a rather sharp angle. The brown line on the margin of the lip is very distinct. The apex is black, the aperture is nearly one-half the length of the shell.

ACHATINA TURBINATA.

Testâ turbinatâ, fuscâ, suprâ obliquo-fasciatâ et maculatâ, striis minutis decussantibus; suturis impressis; anfractibus octonis, convexis, infrâ suturas impressis; aperturâ parvâ, ovatâ; columellâ incurvâ.

Shell turbinate, brownish, above obliquely banded and spotted, with minute decussate striæ; sutures impressed; whorls eight, convex, impressed below the sutures; aperture small, ovate; columella incurved.

Hab. Liberia. Dr. Blanding. My Cabinet and Cabinet of Dr. Blanding. Diam. 1.4, Length 2.7 inches.

Remarks.—Among many shells procured from Liberia by Dr. Blanding were a few specimens of this *Achatina* which I believe has not been described. It has some resemblance to *A. flammata*, Cailliaud, but is a larger species. Those sent to me by that traveller, from Sennar, being very much exerted. The *flammata* from the south of Africa is

shorter than that from Nubia, but it is not so turbate as this species, nor do they agree in the form of their apertures nor in the markings. On the lower whorl the *turbinata* is brown. The superior whorls are obliquely marked with brown bands, which are broken up into spots on the penultimate whorl, and become darker. In the form of the mouth it approaches very closely to the genus *Bulimus*.

ACHATINA STRIATA.

Testâ subcylindraceâ, corneâ, tenui, longitudinaliter elegantissimèque striatâ; suturis impressis; anfractibus octonis, subconvexis; aperturâ parvâ, ellipticâ; columellâ incurvatâ.

Shell somewhat cylindrical, horn colour, thin, longitudinally and beautifully striate; sutures impressed; whorls eight, rather convex; aperture small, elliptical; columella incurved.

Hab. Liberia. Dr. Blanding. My Cabinet and Cabinet of Dr. Blanding. Diam. .12, Length .38 of an inch.

Remarks.—This is a beautiful little species, rather larger than the *folliculus*, Lam. In form it resembles *Bulimus octoneus*, Rang. (*Achatina*,) but is not quite so large. Its minute and close ribs distinguish it at once, as the *octoneus* is perfectly smooth. The aperture is about one-fourth the length of the shell, and the striæ do not extend below the middle part of the lower whorl.

GENUS SUCCINEA. (DRAPARNAUD.)

Eight species of *Succinea* have been described as inhabiting the United States. I now propose to add nine to that number, besides three from the West Indies and East Indies.

SUCCINEA GRACILIS.

Testâ longo-ovatâ, obliquâ, exsertâ, subdiaphanâ, striatâ, pallido-luteâ; spirâ elevatâ; suturis impressis; anfractibus subconvexis; aperturâ longo-ovatâ.

Shell long-ovate, oblique, exserted, subdiaphanous, striate, pale yellow; spire elevated; sutures impressed; whorls subconvex; aperture long-ovate.

Hab. Java? My Cabinet. Diam. .32, Length .42 of an inch.

Remarks.—I procured a single specimen of this graceful and delicate species in New York of a dealer some years since. He informed me that it came from the collection of Mr. Shillaber, which was brought from Batavia. In form it resembles *S. Nuttalliana* herein described, but it is a much more exserted species and larger. The whorls below the sutures are impressed. The striæ are larger and more distant near to the aperture. A small portion only of the epidermis remains, and that is dark. The point of the spire is fractured, and therefore the number of the whorls is not mentioned. I suppose, when perfect there will be found three. The want of the usual transparency may be occasioned by the specimen not being fresh.

SUCCINEA WARDIANA.

Testâ obliquo-ovatâ, subnitidâ, diaphanâ, obsoletè striatâ, luteâ; spirâ breviusculâ; suturis subimpressis; anfractibus ternis, convexis; aperturâ subrotundâ.

Shell obliquely ovate, somewhat shining, diaphanous, obsoletely striate, yellowish; spire rather short; sutures rather impressed; whorls three, convex; aperture nearly round.

Hab. Ohio. Dr. Ward. My Cabinet and Cabinet of P. H. Nicklin. Diam. .20, Length .32 of an inch.

Remarks.—This species was sent to me by the late Dr. Ward from Roscoe, in the northern part of Ohio, and I presume came from the vicinity of that place. It is allied to *S. vermeta*, (Say,) but has a less exserted spire and is not quite so oblique. It is also a smaller species. The aperture is about two-thirds the length of the shell.

SUCCINEA TOTTENIANA.

Testâ obliquo-ovatâ, subnitidâ, subdiaphanâ, obsoletè striatâ, corneâ; spirâ brevi; suturis impressis; anfractibus ternis, convexis; aperturâ ellipticâ.

Shell obliquely ovate, somewhat shining, rather transparent, obsoletely striate, horn colour; spire short; sutures impressed; whorls three, convex; aperture elliptical.

Hab. Newport, Rhode Island. Col. Totten, United States Army. My Cabinet, and Cabinets of Col. Totten, and P. H. Nicklin. Diam. .30, Length .48 of an inch.

Remarks.—Many years since Col. Totten sent me this species. Never having been able to identify it with any described species, I now propose to name it after him. It is rather an inflated species, but not so much so as the *obliqua*, (Say,) nor is it so large. It resembles the *ovalis*, (Say,) but is rather smaller, more oblique and less inflated. The aperture is rather more than two-thirds the length of the shell, and the apex is very small, somewhat mamillate. The epidermis is rather dark. The substance of the shell is slightly iridescent, giving it an opalescent appearance, and this is slightly observed through the epidermis.

SUCCINEA NUTTALLIANA.

Testâ longo-ovatâ, obliquâ, subnitidâ, diaphanâ, striatâ, pallido-luteâ; spirâ subelevatâ; suturis impressis; anfractibus ternis, subconvexis; aperturâ longo-ovatâ.

Shell long-ovate, oblique, transparent, striate, pale yellow; spire rather elevated; sutures impressed; whorls three, somewhat convex; aperture long-ovate.

Hab. Oregon. Prof. Nuttall. My Cabinet and Cabinets of Prof. Nuttall, and Dr. Jay. Diameter .25, Length .50 of an inch.

Remarks.—A very oblique, slender and graceful species, allied to *retusa* nobis, but smaller, less elongated, and not having the inferior part or base quite so retuse. The aperture is about three-fourths the length of the shell.

SUCCINEA AUREA.

Testâ obliquo-ovatâ, nitidâ, diaphanâ, lævi, aureâ; spirâ subelevatâ; suturis impressis; anfractibus ternis, convexis; aperturâ ovatâ.

Shell obliquely ovate, shining, transparent, smooth, golden; spire rather elevated; sutures impressed; whorls three, convex; aperture ovate.

Hab. Springfield, Ohio. T. G. Lea. My Cabinet and Cabinets of T. G. Lea, and P. H. Nicklin. Diam. .20, Length .32 of an inch.

Remarks.—This is a beautiful little species, remarkable for its fine surface and bright golden colour. In form it is nearly allied to *vermeta*, (Say.) In colour it has some resemblance to a species sent to me by M. D'Orbigny, from Paris, under the name of *putris*, Lin., and obtained by him in Colombia. His shell is quite different from the *putris* of Europe, and I propose the name of the distinguished traveller for it; if I am correct, *Succinea Dorbigniana*. The aperture of the *aurea* is about three-fifths the length of the shell.

SUCCINEA CANDÈANA.

Testâ obliquo-ovatâ, subnitidâ, obsoletè varicosâ, diaphanâ, rosâ; spirâ brevi; suturis subimpressis; anfractibus ternis, inflatis; aperturâ lato-ovatâ.

Shell obliquely ovate, somewhat shining, obsoletely varicose, diaphanous, rose colour; spire short; sutures impressed; whorls three, inflated; aperture wide-ovate.

Hab. Martinique. Lieut. Candè. My Cabinet and Cabinet of M. Candè, Paris. Diam. .58, Length .85 of an inch.

Remarks.—Lieut. Candè, of the French navy, was kind enough, a few years since, to give me, among many interesting shells, collected in the Island of Martinique, several specimens of this *Succinea*, which I name after him. I am not aware that it has elsewhere been noticed. In form and size it resembles *S. obliqua*, (Say.) It is, however, larger, has the sutures less impressed, of a redder colour, and in its varicose markings entirely differs. It has some resemblance to that species figured by Ferussac, pl. II. A. fig. 7, but it is more inflated, and the spire is much more obtuse.

SUCCINEA FULGENS.

Testâ obliquo-ovatâ, fulgens, diaphanâ, striatâ, aureâ; spirâ subelevatâ; suturis impressis; anfractibus ternis, convexis; aperturâ lato-ovatâ.

Shell obliquely ovate, brilliant, diaphanous, striate, golden colour; spire rather elevated; sutures impressed; whorls three, convex; aperture wide-ovate.

Hab. Cuba. M. Poey. My Cabinet. Diam. .30, Length .45 of an inch.

Remarks.—Among other land shells received some years since from Mr. Poey, who had under his charge the Botanic Garden of Havana, I received a single specimen of *Succinea* which does not appear to me to have been described. In form it somewhat resembles the *ovalis*, (Say,) but differs in size and colour. In its brilliant colour it is allied to *S. aurea* herein described. It is, however, less brilliant, more inflated, and quite double the size. The aperture is about two-thirds the length of the shell, and the apex takes a reddish hue.

SUCCINEA OREGONENSIS.

Testâ obliquâ, tenui, rugoso-striatâ, rufâ, subdiaphanâ; spirâ exsertâ; suturis valdè impressis; anfractibus ternis, inflatis; aperturâ magnâ, lato-ovatâ.

Shell oblique, thin, rugosely striate, reddish, subdiaphanous; spire exserted; sutures much impressed; whorls three, inflated; aperture large, wide-ovate.

Hab. Oregon. Prof. Nuttall. My Cabinet, and Cabinets of Prof. Nuttall, and Dr. Jay. Diam. .15, Length .30 of an inch.

Remarks.—A single specimen only of this small species was given to me by Mr. Nuttall. It nearly answers to Mr. Say's description of *S. avara*, but differs in size, colour and form from that usually received as his species. The spire is elevated for a *Succinea*, and curls somewhat like a worm. The aperture is a good deal rounded, and is about two-thirds the length of the shell.

SUCCINEA INFLATA.

Testâ subrotundâ, inflatâ, tenui, lacteâ; spirâ brevi; suturis subimpressis; anfractibus ternis, rotundatis; aperturâ lato-ovatâ.

Shell subrotund, inflated, thin, milk-white; spire short; sutures impressed; whorls three, rounded; aperture wide-ovate.

Hab. South Carolina. Prof. Ravenel. My Cabinet, and Cabinet of Prof. Ravenel. Diam. .30, Length .45 of an inch.

Remarks.—Many years since Prof. Ravenel sent me several specimens of this species under the name of *S. campestris*, (Say.) It does not, however, answer entirely to Say's description, and it certainly is not the same species with those placed in the Philadelphia Museum under that name by him. It is a more inflated species. It is quite white, with a few semi-transparent longitudinal lines. The aperture is about three-fourths the length of the shell.

PLANORBIS. (LAMARCK.)

Seventeen species of the genus *Planorbis* have been described as inhabiting the waters of the United States, and I now propose to add three to that number. Lamarck described twelve, of which eight inhabit Europe.

PLANORBIS REGULARIS.

Testâ subglobosâ, supernè subplanâ, subtus angusto-umbilicatâ, pellucidâ, pallido-luteâ, obsoletè striatâ; anfractibus ternis, supernè carinatis; labro acuto, marginato, intus incrassato; aperturâ ovalâ.

Shell subglobose, above nearly flat, beneath narrow umbilicate, pellucid, pale yellow, obsoletely striate; whorls three, above carinate; lip acute, margined, within thickened; aperture ovate.

Hab. United States. My Cabinet and Cabinet of P. H. Nicklin. Diam. .30, Length .20 of an inch.

Remarks.—I have unfortunately mislaid the label which accompanied the shells from which the above descriptions were made. My impression is that they came from one of the Western States. All the specimens before me are very much alike in size and form, being exceedingly regular. The striæ are more perceptible around the umbilicus and on the spire. On the side they are so much obliterated as to permit the whorl to present a shining appearance. The carina is very sharp and well defined. It has very much the appearance of a young *trivolvis*, (Say,) and may possibly be only a variety of that species.

PLANORBIS BUCHANENSIS.

Testâ sublenticulari, supernè subconvexâ, ad periphæriam carinatâ, subtus angusto-umbilicatâ, vel corneâ vel sub-fuscâ, lævi; anfractibus ternis; labro acuto; aperturâ rotundâ.

Shell sublenticular, above subconvex, carinate at the periphery, beneath narrow umbilicate, horn-colour or brownish, smooth; whorls three; lip sharp; aperture rounded.

Hab. Near Cincinnati, Ohio. R. Buchanan. My Cabinet, and Cabinets of T. G. Lea, and R. Buchanan. Diam. .12, Length .08 of an inch.

Remarks.—Several specimens of this species were sent to me several years since by my brother T. G. Lea, who informed me that they were first observed by Mr. Buchanan, after whom I name it. This species is very nearly allied to *P. lens*,* nobis, but it may at once be distinguished by its round aperture, which is somewhat spread out. The aperture of the *lens*, (now *lenticularis*,) is *triangular*, and the size of the shell rather larger.

PLANORBIS BELLUS.

Testâ orbiculari, supernè plano-concavâ, subtus lato umbilicatâ, virido-luteâ, creberrimè et elegantissimè striatâ; anfractibus quaternis, supernè carinatis, subtus subcarinatis; labro acuto; aperturâ parvâ, subrotundâ, intus rufo-fuscâ.

Shell orbicular, above regularly concave, beneath widely umbilicate, greenish yellow, closely and beautifully striate; whorls four, carinate above, subcarinate below; lip sharp; aperture small, within reddish brown.

Hab. Tennessee. Dr. Troost. My Cabinet, and Cabinet of Dr. Troost. Diam. .40, Length .22 of an inch.

* This name being preoccupied, I propose to change it to *lenticularis*.

Remarks.—A single specimen only of this species was received from Dr. Troost. Like the *P. corpulentus*, (Say,) it is covered with striæ, but in the *bellus* they are much closer and more regular. It is a much less inflated shell, and more regular in its form.

PHYSA. (LAMARCK.)

The genus *Physa*, established, as some authors say, for the reversed species of *Lymnæa*, is abundant in the fresh waters of our country. There have been twelve species heretofore described as inhabiting the United States, and I now propose to add three more to the number.

As to the propriety of the separation from *Lymnæa*, I have no doubt. To those who have been familiar with many species of the two genera, their distinctive characters will, I think, be perfectly apparent. Lamarck described only four species.

PHYSA HILDRETHIANA.

Testâ ellipticâ, subcompressâ, longâ, subpellucidâ; spirâ obtuso-elevatâ; anfractibus quinis; labro marginato; aperturâ longâ, compressâ.

Shell elliptical, somewhat compressed, long, somewhat pellucid; spire obtusely elevated; whorls five; lip margined; aperture long, compressed.

Hab. A lake in Illinois. Dr. Hildreth. My Cabinet, and Cabinet of Dr. Hildreth. Diam .40, Length .75 of an inch.

Remarks.—This species is among the largest, and is perhaps the most remarkable *Physa* yet observed in this country. The aperture is little more than half the length of the shell. The apex is very obtuse, and the whole shell is somewhat cylindrical. A single specimen was brought by Mr. Nicklin from Dr. Hildreth, and I name it after him, as he seems first to have observed it.

PHYSA INFLATA.

Testâ inflatâ, tenebrosâ, subpellucidâ; spirâ subelevatâ, acuto-conicâ; anfractibus quinis; labro marginato inflato; aperturâ latâ.

Shell inflated, dark, somewhat pellucid; spire somewhat elevated, acutely conical; whorls five; outer lip margined and inflated; aperture wide.

Hab. Virginia, between the Salt Sulphur, and the Sweet Springs. P. H. Nicklin. My Cabinet and Cabinet of Mr. Nicklin. Diam .48, Length .65 of an inch.

Remarks.—Two specimens were taken by Mr. Nicklin in a small stream which crosses the road in a gap in the main chain of the Alleghany Mountain between the Salt Sulphur and the Sweet Springs in Virginia. The gap is nearly level for several miles, and some of the streams run to the West and some to the East. This species seems to me to differ from any with which I am acquainted. It is perhaps most nearly allied to *P. heterostropha*, (Say,) but has a shorter aperture and is more inflated.

PHYSA TROOSTIANA.

Testâ ellipticâ, subcrassâ, luteo-fuscâ, lævi; spirâ obtusâ; suturis subimpressis; anfractibus quinis, subconvexis; labro marginato, intus incrassato; aperturâ parvâ, ovatâ, contractâ.

Shell elliptical, rather thick, yellow-brown, smooth; spire obtuse; sutures slightly impressed; whorls five, slightly convex; lip margined, thickened within; aperture small, ovate, contracted.

Hab. Near Nashville, Tennessee. Dr. Troost. My Cabinet and Cabinet of Dr. Troost. Diam. .25, Length .45 of an inch.

Remarks.—This is a short, obtuse species about the size of *P. aurea*, (nobis.) The substance of the shell is very thick for the genus, and it is much more thickened within the margin than any species I have observed. The line along the margin of the lip is of a reddish brown. The indentation of the columella is lower than usual. The aperture is about two-thirds the length of the shell.

GENUS LYMNÆA. (LAMARCK.)

The genus *Lymnæa* seems to be widely distributed round the globe. Lamarck describes seven species as indigenous to France. We have had twenty-seven species described by Mr. Say, and other American zoologists, and to them I now propose to add sixteen from our own country, including several brought by Mr. Nuttall from Oregon, besides one taken by this traveller from Oahu.

In the enumeration above, I include Mr. Say's *L. appressa*, although my conviction has been for a long time that it is only the analogue of *stagnalis* of Europe. I have taken it on the St. Lawrence, and my cabinet is also possessed of American specimens from Vermont, Ohio, and Oregon. Its geographical distribution is probably wider than that of any other species of *Lymnæa*.

LYMNÆA PHILADELPHICA.

Testâ ovato-conicâ, tenui, striatâ, nitidâ, diaphanâ, subaureâ, imperforatâ; spirâ subelevatâ; suturis valdè impressis; anfractibus quinis, convexis; aperturâ angusto-ellipticâ.

Shell ovately conical, thin, striated, shining, diaphanous, rather golden, imperforate; spire rather elevated; sutures much impressed; whorls five, convex; aperture narrow-elliptical.

Hab. River Schuylkill, near Philadelphia. My Cabinet, and Cabinets of P. H. Nicklin, and Dr. Griffith. Diam. .20, Length .48 of an inch.

Remarks.—This species is about the size of, and is allied to *plica* and *Griffithiana*, herein described, and to *modicella*, (Say.) It has a more elongated aperture than *Griffithiana*, has a smaller fold than *plica*, and is higher in the spire than *modicella*. The aperture is about half the length of the shell. I procured many specimens west of Philadelphia. Dr. Griffith informs me that he found them common south of the city.

LYMNÆA GRIFFITHIANA.

Testâ ovato-conicâ, tenui, substriatâ, nitidâ, subdiaphanâ, luteo-corneâ, perforatâ; spirâ breviusculâ; suturis impressis; anfractibus quinis, convexis; aperturâ ellipticâ.

Shell ovately conical, thin, substriate, shining, somewhat diaphanous, yellowish horn-colour, perforate; spire rather short; sutures impressed; whorls five, convex; aperture elliptical.

Hab. Charlotte Lake, Columbia County, New York. Dr. Griffith. My Cabinet, and Cabinets of Dr. Griffith, and Philadelphia Museum. Diam. .20, Length .30 of an inch.

Remarks.—Rather a small species, differing from most in the form of the mouth, which is nearly a perfect ellipse. In a perfect specimen before me the aperture within the margin of the lip is thickened by a raised line. The aperture is not quite one-half the length of the shell. I name it after R. E. Griffith, M. D., who seems to be the only person who has observed it.

LYMNÆA NUTTALLIANA.

Testâ ovato-conicâ, subtenui, striatâ, subdiaphanâ, pallido-fuscâ, imperforatâ; spirâ breviusculâ; apice rufâ; suturis impressis; anfractibus senis, convexis; aperturâ ovatâ, inflatâ, intus fasciatâ.

Shell ovately conical, rather thin, striate, subdiaphanous, pale brown, imperforate; spire rather short; apex red; sutures impressed; whorls six, convex; aperture ovate, inflated, banded within.

Hab. Oregon. Prof. Nuttall. My Cabinet and Cabinets of Prof. Nuttall, and Dr. Jay. Diam. .50, Length .95 of an inch.

Remarks.—A fine, rather robust species, resembling *L. elodes*, (Say,) but shorter and more inflated and having a larger and more curved fold. The aperture is rather more than one-half the length of the shell, and is retuse at the lower part. Under the lens may be observed very minute revolving striæ. The band within the aperture is removed from the edge of the lip, and is broad and brown. The lip is not reflexed.

LYMNÆA BULIMOIDES.

Testâ ovato-conicâ, subtenui, lævi, nitidâ, diaphanâ, fusco-luteâ, minutè perforatâ; spirâ breviusculâ; suturis parvis; anfractibus quinis, subconvexis; aperturâ ovatâ.

Shell ovately conical, rather thin, smooth, shining, diaphanous, brownish yellow, slightly perforate; spire rather short; sutures small; whorls five, slightly convex; aperture ovate.

Hab. Oregon. Prof. Nuttall. My Cabinet, and Cabinet of Prof. Nuttall. Diam. .22, Length .38 of an inch.

Remarks.—Among the shells taken by Prof. Nuttall during his journey over the Rocky Mountains, was this small species, the aperture of which is formed very much like a *Bulimus*. The deposit of the columella is wide, and nearly covers the perforation, which consequently is very small. The aperture is more than half the length of the shell, and the fold obsolete. Several of the specimens, although the substance of the shell is thin, have the apex eroded, some of the superior whorls being entirely gone. I have not observed this to be the case in any other *Lymnæa*.

LYMNÆA EXIGUA.

Testâ subfusiformi, tenui, striatâ, subdiaphanâ, pallido-luteâ, perforatâ; spirâ breviusculâ; suturis impressis; anfractibus quinis, subconvexis; aperturâ ellipticâ.

Shell subfusiform, thin, striated, subdiaphanous, pale yellow, perforate; spire rather short; sutures impressed; whorls five, rather convex; aperture elliptical.

Hab. Tennessee. Dr. Troost. My Cabinet and Cabinet of Dr. Troost. Diam. .15, Length .35 of an inch.

Remarks.—This is a small species about the size of *L. plica*, herein described, and in outline resembling it. It differs, however, altogether in the columella, which is nearly straight, and the folds scarcely observable. The aperture is about one-half the length of the shell, and contracted at the lower part.

LYMNÆA PLANULATA.

Testâ ovato-conicâ, tenui, lævi, subdiaphanâ, fuscâ, perforatâ; spirâ breviusculâ; suturis impressis; anfractibus quinis, convexis; aperturâ parvâ, ovatâ.

Shell ovately conical, thin, smooth, subdiaphanous, brown, perforate; spire rather short; sutures impressed; whorls five, convex; aperture small, ovate.

Hab. White Sulphur Springs, Virginia. P. H. Nicklin. My Cabinet and Cabinet of P. H. Nicklin. Diam. .15, Length .35 of an inch.

Remarks.—Several specimens of this small species are before me, one of them considerably larger than the other, and possessing one more whorl. The whorls are inflated, but flattened in the middle. This gives a roundness to their superior part. The perforation is small, and the fold scarcely observable. The aperture is less than half the length of the shell, and contracted.

LYMNÆA FUSIFORMIS.

Testâ fusiformi, subcrassâ, crebrè striatâ, pallido-luteâ, imperforatâ; spirâ breviusculâ; suturis leviter impressis; anfractibus senis, planulatis; aperturâ angusto-ellipticâ.

Shell fusiform, rather thick, closely striate, pale yellow, imperforate; spire rather short; sutures slightly impressed; whorls six, flattened; aperture narrow-elliptical.

Hab. Niagara river, Lewistown, New York. Tobias Wagner. My Cabinet, and Cabinets of P. H. Nicklin, and Tobias Wagner. Diam. .35, Length .60 of an inch.

Remarks.—Among a number of interesting shells collected by Mr. T. Wagner, during a long journey in the interior of our country, were several specimens of this species, which has not been, I believe, before noticed. It is found with and is somewhat allied to *L. deciddiosa*, (Say.) It differs in being more fusiform, having a larger aperture and flatter whorls, and in being imperforate. It is about the size of, and resembles *L. casta*, herein described. It differs in being less elevated in the spire, in the whorls being more flattened, in having a distinct and curved fold, and in being imperforate. The aperture is nearly two-thirds the length of the shell. The last two whorls are disposed to be wrinkled.

LYMNÆA RUSTICA.

Testâ subfusiformi, tenui, imperforatâ; spirâ subelevatâ; suturis impressis; anfractibus quinis, subconvexis; aperturâ angusto-ellipticâ.

Shell subfusiform, thin, imperforate; spire rather elevated; sutures impressed; whorls five, rather convex; aperture narrow elliptical.

Hab. Poland, Ohio. Dr. Kirtland. My Cabinet, and Cabinet of Dr. Kirtland. Diam. .15, Length .35 of an inch.

Remarks.—A single specimen only of this was received with some other species. It is a small and rather slender species, with a regular tapering spire and an aperture about half the length of the shell. The whole shell is covered over with a red coating of the oxide of iron, giving it a rough aspect.

LYMNÆA PLICA.

Testâ turritâ, subtenui, luteâ, striatâ, imperforatâ; spirâ subelevatâ; suturis impressis; anfractibus quinis, convexis; aperturâ parvâ, ellipticâ.

Shell turrited, rather thin, yellow, striate, imperforate; spire rather elevated; sutures impressed; whorls five, convex; aperture small, elliptical.

Hab. Tennessee. Dr. Troost. My Cabinet, and Cabinet of Dr. Troost. Diam. .18, Length .38 of an inch.

Remarks.—A small species, with a large incurved fold. It resembles *L. exigua*, herein described, in size, but in the form of the columella it is entirely different. The aperture is about half the length of the shell.

LYMNÆA COARCTATA.

Testâ fusiformi, tenuissimâ, obsoletè striatâ, diaphanâ, corneâ, imperforatâ; spirâ brevi, mucronatâ; suturis leviter impressis; anfractibus quaternis, subplanulatis; aperturâ grandi, ovatâ.

Shell fusiform, very thin, obsoletely striate, diaphanous, horn colour, imperforate; spire short, pointed; sutures slightly impressed; whorls four, rather flattened; aperture large, ovate.

Hab. Newport, Rhode Island. Col. Totten, United States Army. My Cabinet, and Cabinet of Col. Totten. Diam. .30, Length .55 of an inch.

Remarks.—This is one of the most delicate and fragile of the genus *Lymnæa*, which I have seen. It is allied to Mr. Say's *columella*, but may at once be distinguished by the compression of the superior part of the body whorl, which causes an acute angle in the superior part of the aperture. Under a rather powerful lens, some of the specimens may be perceived to have very minute revolving striæ. The aperture is two-thirds the length of the shell, and is inflated at the inferior part. The fold of the columella is delicate and incurved.

LYMNÆA CASTA.

Testâ subfusiformi, subcrassâ, crebrè striatâ, luteâ, perforatâ; spirâ subelevatâ, acuminatâ; suturis impressis; anfractibus senis, convexis; aperturâ grandi, ovatâ.

Shell subfusiform, rather thick, closely striate, yellow, perforate; spire rather elevated, acuminate; sutures impressed; whorls six, convex; aperture large, ovate.

Hab. Poland, Ohio. Dr. Kirtland. My Cabinet, and Cabinets of Dr. Kirtland and T. G. Lea. Diam. .30, Length .58 of an inch.

Remarks.—The columella of this species is remarkably straight, and being reflected causes the lower part of the aperture to be slightly effuse. The last whorl is wrinkled. The aperture is more than half the length of the shell. It is allied to *L. deciduosus*, (Say,) but is a smaller species, has the spire more exerted, and a less curved fold. The perforation is very small. Dr. Kirtland kindly sent me many specimens several years since.

LYMNÆA PARVA.

Testâ subturritâ, tenui, lævi, diaphanâ, corneâ, subperforatâ; spirâ elevatâ; suturis impressis; anfractibus quinis, convexis; aperturâ ellipticâ.

Shell subturrited, thin, smooth, diaphanous, horn colour, subperforate; spire elevated; sutures impressed; whorls five, convex; aperture elliptical.

Hab. Cincinnati, Ohio. T. G. Lea. My Cabinet, and Cabinet of T. G. Lea. Diam. .12, Length .22 of an inch.

Remarks.—This is the smallest species which has come under my notice. In general form it resembles *L. curta*, herein described. It is rather less inflated, has a longer aperture, and is more diminutive. The perforation, too, is smaller, and the columella more curved. The two specimens before me have the superior whorls black from the deposit of the oxide of iron. The aperture is about half the length of the shell.

LYMNÆA CURTA.

Testâ subturritâ, subtenui, nitidâ, subdiaphanâ, luteâ, perforatâ; spirâ elevatâ; suturis impressis; anfractibus senis, convexis; aperturâ parvâ, ellipticâ.

Shell subturrited, rather thin, shining, subdiaphanous, yellow, perforate; spire elevated; sutures impressed; whorls six, convex; aperture small, elliptical.

Hab. Cincinnati, Ohio. T. G. Lea. Poland, Ohio. Dr. Kirtland. My Cabinet, and Cabinets of T. G. Lea, and Dr. Kirtland. Diam. .18, Length .32 of an inch.

Remarks.—A very small erect species resembling in the form of the aperture, a *Bulimus*, the fold being scarcely perceptible. In its general outline it resembles a *Paludina*, more than most *Lymnææ*. In these characters it is allied to *L. bulimoides* herein described. The aperture is rather more than one-third the length of the shell, and the last whorl is wrinkled. The columella is thickened, and reflected over the perforation.

LYMNÆA STRIGOSA.

Testâ longo-ovatâ, subobliquâ, diaphanâ, striatâ, corneâ, tenui, imperforatâ; spirâ brevi; suturis impressis; anfractibus quinis, subconvexis; aperturâ ovatâ.

Shell long oval, somewhat oblique, diaphanous, striate, horn-coloured, thin, imperforate; spire short; sutures impressed; whorls five, somewhat convex; aperture ovate.

Hab. Near Cincinnati, Ohio. T. G. Lea. My Cabinet, and Cabinet of T. G. Lea. Diam. .38, Length .75 of an inch.

Remarks.—This is a very thin fragile species somewhat resembling *L. columella*, (Say,) but may at once be distinguished from that species by its longer spire and less inflated body whorl. It is allied to *L. coarctata*, herein described, differing, however, in being more oblique and in having the whorls more inflated. The aperture is about three-fourths the length of the shell, and acutely angular above.

LYMNÆA KIRTLANDIANA.

Testâ turritâ, tenui, enormiter striatâ, pallido-corneâ, imperforatâ; spirâ elevatâ, attenuatâ; suturis impressis; anfractibus senis, subconvexis; aperturâ angusto-ellipticâ.

Shell turritated, thin, irregularly striate, pale horn colour, imperforate; spire elevated, attenuate; sutures impressed; whorls six, slightly convex; aperture narrow elliptical.

Hab. Poland, Ohio. Dr. Kirtland. My Cabinet, and Cabinets of Dr. Kirtland and T. G. Lea. Diam. .26, Length .70 of an inch.

Remarks.—Many years since Dr. Kirtland sent me several specimens of this shell. I am not aware of its having yet been described. It may have been mistaken for *L. acuta*, (nobis,) being about the size and having the aspect of that shell. It may be distinguished from it, by having a longer and narrower body whorl, and a shorter and narrower aperture. The fold on the columella is smaller and the outer lip less curved. It is a smaller species than the *reflexa*, (Say,) has one whorl less and the mouth is longer. In other characters it resembles it, if the reflected lip be excepted. The aperture is rather less than half the length of the shell. Most of the specimens have an obscure brown line within the margin of the outer lip. The body whorl is disposed to be flattened, and is irregularly wrinkled. Under the lens the fine striæ which usually are found in the *Lymnææ*, may be observed beautifully displayed over the whole shell. The superior portion of all the specimens sent, have more or less deposit of the oxide of iron, which gives them the appearance of having two colours.

LYMNÆA RUBELLA.

Testâ ovato-conicâ, tenui, lævi, nitidâ, diaphanâ, rubellâ, imperforatâ; spirâ breviusculâ; suturis parvis; anfractibus quinis, subconvexis; aperturâ subgrandi, ovatâ.

Shell ovately conical, thin, smooth, shining, diaphanous, reddish, imperforate; spire rather short; sutures small; whorls five, somewhat convex; aperture rather large, ovate.

Hab. Oahu. Prof. Nuttall. My Cabinet, and Cabinet of Prof. Nuttall. Diam. .20, Length .35 of an inch.

Remarks.—This is a small species procured by Prof. Nuttall during his sojourn at the Sandwich Islands. It is rather smaller than Say's *modicella*, but may be distinguished by its reddish colour, bright surface and distinct fold. The aperture is more than half the length of the shell. The lip is margined by a red line on the inside where the specimen is mature. Some individuals are covered by a deposit of ferruginous matter.

PALUDINA. (LAMARCK.)

Lamarck described seven species of this genus, five of them being European. In the United States, the species are quite numerous. Mr. Say described thirteen, one of which (*dissimilis*,) properly belongs to his genus *Anculosa*, and three (*limosa*, *porata* and *lustrica*,) may be transferred to Dr. Gould's genus *Amnicola*. Fifteen others have been proposed by myself and other naturalists, and I now add three to the number.

PALUDINA REGULARIS.

Testâ subglobosâ, subcrassâ, virido-cornedâ, lævi, imperforatâ; spirâ brevissimâ; suturis impressis; anfractibus quinque, convexis; aperturâ magnâ, ovatâ, intus cæruleâ.

Shell subglobose, rather thick, greenish horn colour, imperforate; spire very short; sutures impressed; whorls five, convex; aperture large, ovate, within bluish.

Hab. Ohio? T. G. Lea. My Cabinet, and Cabinet of T. G. Lea. Diam. .38, Length .52 of an inch.

Remarks.—A very distinct species with the body whorl about four-fifths the length of the shell. The whorls are very regular, giving the spire somewhat the appearance of a coil of rope. All the specimens before me are more or less incrustated with the oxide of iron. The aperture is inflated, and about three-fourths the length of the shell.

I am not positively sure that this species came from Ohio. By some accident the label has been misplaced, but I am under the impression it came with some other species from my brother at Cincinnati.

PALUDINA OBTUSA.

Testâ subcylindraceâ, subtenui, tenebroso-viridi, lævi, minutè perforatâ; spirâ brevi, ad apicem valdè obtusâ; suturis impressis; anfractibus quaternis, convexis; aperturâ parvâ, subrotundâ.

Shell subcylindrical, rather thin, dark green, smooth, slightly perforate; spire short, at the beaks very obtuse; sutures impressed; whorls four, convex; aperture small, nearly round.

Hab. Ohio. Dr. Kirtland. My Cabinet, and Cabinet of Dr. Kirtland. Diam. .07, Length .10 of an inch.

Remarks.—This is among the smallest of the genus, and may at once be distinguished by its obtuse apex which has the appearance almost of being truncate. The whorls do not decrease regularly from the lower one to the apex, the greatest diameter being apparently across the second whorl. In form, therefore, it has the aspect of a *Pupa*. It answers partly to the description of *Paludina Alleghaniensis*, (Green,) but seems to differ in the truncate appearance of the apex, and in the size. Two specimens were found in a box with some other small species, kindly sent to me by Dr. Kirtland. It is rather less than *P. Nickliniana*, and differs from it in being less tapering to the apex. It very closely resembles *P. viridis*, (Lam.) but is rather larger and more obtuse. There were no opercula to examine in these specimens. Aperture rather more than one-third the length of the shell.

PALUDINA TROOSTIANA.

Testâ ventricosò-conoideâ, tenui, pellucidâ, luteo-corneâ, lavi, perforatâ; spirâ brevi; suturis valdè impressis; anfractibus quaternis, convexis; aperturâ magnâ, rotundatâ, albâ.

Shell ventricosò-conical, thin, pellucid, yellowish horn colour, smooth, perforate; spire short; sutures very much impressed; whorls four, convex; aperture large, rounded, white.

Hab. Tennessee. Prof. Troost. My Cabinet, and Cabinet of Prof. Troost. Diam. .68, Length .72 of an inch.

Remarks.—This is a subglobose species, differing from any which has come under my notice, in having the superior portion of the last whorl somewhat flattened, giving the shell a somewhat gibbous appearance. The operculum is rather of a light colour, and the plane of the aperture is very retuse at its base. It has a strong resemblance to *P. unicolor*, (Lamarck,) and perhaps a stronger one to *P. Maheyana*, (Grateloup.) It is more depressed in the spire than either, and the perforation is smaller than in the former, while it is nearly the size of that in the latter. The aperture is larger than either. Dr. Grateloup has very properly, I think, separated the Malabar species from that which was observed by Olivier in Egypt, and called *unicolor* by Lamarck. The Egyptian shell has a larger perforation, is darker in colour, and is a larger species. I call this after my friend Prof. Troost.

GENUS ANCULOSA. (SAY.)

The genus *Anculosa* was proposed by Mr. Say, in the Journal of the Academy of Natural Sciences, vol. 2, p. 178, (1821,) for a new shell, which he then described under the name of *Melania prærosa*. I am not aware that he ever published a description of his proposed genus, but he then mentioned, that it did not correspond with the genus to which he "at present referred it," and he farther says, that "owing to the configuration of the base of the columella, if it is not a *Melanopsis*, it is probable its station will be between the genera *Melania* and *Achatina*."

Four years afterwards, in describing a new species of the same group, under the name of *Melania subglobosa*, he says, "It is a second species of my proposed genus *Anculotus*." He does not allude to the fact of having changed the termination of the name of his proposed genus. I have, therefore, always made use of the first, believing that the change was made through inadvertence. Mr. Haldeman, in his "Monograph of the Limniades," very properly uses *Anculosa*, while Mr. Conrad, in his "New Fresh Water Shells," with some other zoologists, uses *Anculotus*.

The generic characters of the shell of this animal, are difficult in some cases to seize, as the form of the aperture varies, as well as the form of the spire, (notwithstanding its name,) in many species.

Mr. Haldeman seems first to have observed the animal, which he found to differ from *Melania*. He describes it, as having a "very small foot, adapted for holding; animal sedentary; inhabits very rapid water, attached to stones." This of course separates it from *Melania*, and the "obvious characters" of the shell will generally distinguish it from both *Melania* and *Paludina*, as it has usually a callous columella, and a rounded aperture. The operculum, like that of *Melania*, is subspiral; at the same time it appears to me, that the point of radiation in that of *Anculosa* is usually nearer the margin. In the older specimens, the point of radiation is often directly on the margin. This, probably, is owing to part of it being worn away by the motion of the animal.

I am not aware, of this genus having been observed out of the United States. There have been seventeen species described, nearly all of which will stand, and I now propose to add four to that number.

ANCULOSA TROOSTIANA.

Testâ ovato-conicâ, crassâ, minutè rugosâ, tenebroso-fuscâ; spirâ subelevatâ; suturis subimpressis; anfractibus planulatis; aperturâ rotundâ, intus cæruleâ; columellâ crassâ, vel albâ vel carneâ.

Shell ovately conical, thick, minutely rugose, dark brown; spire somewhat elevated; sutures rather impressed; whorls flattened; aperture rounded, within bluish; columella thick, white or flesh-coloured.

Hab. Tennessee. Professor Troost. My Cabinet, and Cabinet of Professor Troost. Diam. .50, Length .60 of an inch.

Remarks.—There are many specimens before me, all of which in form are unusually alike, for a species of *Anculosa*. It differs from other species which have come under my notice, in its spire, which is quite elevated, giving it the aspect of the genus *Melania*. Small irregular wrinkles, or granulations, may be observed over the whole surface in most specimens, and I believe this will generally be found to be more or less the case with most of the species.

ANCULOSA GIBBOSA.

Testâ subglobosâ, gibbosâ, crassâ, subnigrâ, crebrè striatâ; spirâ brevi; suturis impressis; anfractibus subplanulatis; aperturâ subquadrangulâ, vel carneâ vel albidâ.

Shell subglobose, gibbous, thick, nearly black, thickly striate; spire short; sutures impressed; whorls rather flattened; aperture subquadrangular, flesh-coloured or whitish.

Hab. Tennessee. Professor Troost. My Cabinet, and Cabinet of Prof. Troost. Diam. .50, Length .68 of an inch.

Remarks.—This species is about the size of *An. subglobosa*, (Say.) It is not so regularly rounded, being flattened on the upper part of the whorl. The striæ are minute, and seem to be formed by the lines of growth. There is quite a callus on the superior part of the columella, the middle part being deeply impressed. The number of whorls could not be ascertained from my specimens, all of them being more or less eroded.

ANCULOSA CARINATA.

Testâ ovato-conoideâ, carinatâ, tenebroso-olivaceâ; spirâ breviusculâ; suturis parvis; anfractibus senis; aperturâ parvâ, rotundâ, intus albidâ, sulcatâ; columellâ subcrassâ, purpureâ.

Shell ovately conical, carinate, dark olive; spire rather short; sutures small; whorls six; aperture small, round, within whitish, sulcate; columella rather thick, purple.

Hab. Roanoke River, Lafayette. J. A. Warder, M. D. My Cabinet, and Cabinet of Dr. Warder. Diam. .38, Length .52 of an inch.

Remarks.—A single specimen only of this interesting species was sent to me by Dr. Warder. It has some resemblance to *Anculosa dissimilis*, (Say.) It differs in having a smaller and rounder aperture, and in having three *carinæ*, the middle one being the largest. The aperture is rather more than one-third the length of the shell. The *carinæ* are acute.

ANCULOSA VARIABILIS.

Testâ obtuso-conoideâ, crassâ, vel fasciatâ vel corneâ vel carinatâ vel lævi; suturis linearibus; anfractibus senis, planulatis; aperturâ magnâ, subrotundâ; columellâ crassâ, vel albâ vel purpureâ.

Shell obtusely conical, thick, either banded or horn-coloured, carinate or smooth; sutures linear; whorls six, flattened; aperture large, nearly round; columella thick, white or purple.

Hab. Roanoke River, Lafayette, and near Shenandoah Spring Brook. J. A. Warder, M. D. My Cabinet, and Cabinets of Dr. Warder and T. G. Lea, Cincinnati. Diam. .38, Length .56 of an inch.

Remarks.—Three specimens are before me, all of which differ more or less. Two of them are rather acutely carinate, with a dark epidermis and three rather large bands, the other is of a rather light horn colour with indistinct bands in the interior, and having no carina on the lower whorl. On the columella, there is a slight swelling. The aperture is about one-half the length of the shell.

AMNICOLA. (GOULD.)

The genus *Amnicola*, proposed by Dr. Gould, and adopted by Mr. Haldeman, in his table of "Water-breathing Lymniades," is separated from the genus *Paludina*; *Paludina lustrica*, (Say,) being made the type. There seems to be sufficient reason for this division, as the animal is different, and the operculum subspiral, differing in this respect entirely from that of *Paludina*, which is concentric.

It is difficult in the present state of our knowledge of these small shells to say how many species are known, as the animals and opercula of all the small species of *Paludina* have not yet been observed. *P. limosa* (Say,) and *porata* (Say,) will belong to this genus.*

AMNICOLA ORBICULATA.

Testâ orbiculatâ, subtenui, luteolâ, lævi, umbilicatâ; spirâ brevi; suturis valdè impressis; anfractibus quinis, inflatis; aperturâ magnâ, rotundâ.

Shell orbicular, rather thin, yellowish, smooth, umbilicate; spire short; sutures much impressed; whorls five, inflated; aperture large, round.

Hab. Springfield, Ohio. T. G. Lea. Schuylkill? near Philadelphia. My Cabinet, and Cabinet of T. G. Lea. Diam. .18, Length .18 of an inch.

Remarks.—This species is very closely allied to *Am. parva*, and may perhaps prove to be only a variety of it. The specimens before me are all larger, and they appear to be more globose. The aperture is about one-half the length of the shell. I found a single specimen of this species among many small shells which were thrown together in a box, as being collected from our vicinity. It may be possible that it is an Ohio specimen gotten by accident into the box.†

AMNICOLA PARVA.

Testâ obtuso-conicâ, subtenui, luteolâ, lævi, umbilicatâ; spirâ brevi; suturis impressis; anfractibus quaternis, inflatis; aperturâ magnâ subrotundâ.

Shell obtusely conical, rather thin, yellowish, smooth, umbilicate; spire short; sutures impressed; whorls four, inflated; aperture large, nearly round.

Hab. Springfield, Ohio. T. G. Lea. My Cabinet, and Cabinet of T. G. Lea. Diam. .15, Length .18 of an inch.

Remarks.—The shell described by Mr. Anthony as *Paludina Cincinnatiensis*, resembles this species, but it is more elevated in the spire, and is a larger shell. It is more

* The shell described by me in vol. 6, page 22, of the Transactions, as *Paludina pallida*, and previously by Mr. Say as *Melania isogona*, but which I had not before seen, has been carefully examined by my brother T. G. Lea of Cincinnati, as to the form and habits of the animal. There can no longer be any doubt of its belonging to the genus *Amnicola*; it should therefore be called *Amnicola isogona*.

† Since the above was written, I have observed a single specimen of this shell among those in the Academy of Natural Sciences, with the true *porata*, from Cayuga Lake. It is, therefore, probable that it exists in our rivers flowing into the Atlantic.

nearly allied to *Amnicola orbiculata*, herein described, but may be distinguished by its being a smaller shell, and being less round in the aperture. The base of the lip is disposed to be slightly angular: the aperture is about one-half the length of the shell.

IO. (LEA.)

The genus *Io* was proposed by me for Mr. Say's *Fusus fluviatilis*. I subsequently added the *spinosa*, which may perhaps prove to be only a variety of the other. The *tenebrosa* now proposed, will make three species of this genus.

IO TENEBROSA.

Testâ fusiformi, subtenui, subnigrâ, lævi; spirâ conicâ; suturis vix impressis; anfractibus senis, subplanulatis; aperturâ enormiter pyriformi, intus purpureâ.

Shell fusiform, rather thin, nearly black, smooth; spire conical; sutures scarcely impressed; whorls six, flattened; aperture irregularly pear-shaped, within purple.

Hab. Tennessee. S. M. Edgar. My Cabinet, and Cabinets of Mr. Edgar and Prof. Troost. Diam. .48, Length .75 of an inch.

Remarks.—A single specimen only was brought by Mr. Edgar from Tennessee. It is a small specimen, and may be immature. After a good deal of hesitation, I have determined to give it a place among the species. It seems to me to be very distinct in colour. The channel is more curved to the left and backward, than in Mr. Say's species. It has no trace of spines or tubercles, and is dark all over. I do not know if it ever occurs banded.

Read June 18, 1841.

HELIX MOBILIANA.

Testâ subglobosâ, rufo-corneâ, nitidâ, perforatâ; spirâ brevi, obtusâ; suturis impressis; anfractibus senis, convexis; aperturâ lunatâ; labro reflexo.

Shell subglobose, reddish horn colour, shining, perforate; spire short, obtuse; sutures impressed; whorls six, convex; aperture lunate; lip reflexed.

Hab. Vicinity of Mobile, Alabama. Mr. Charles Lea. My Cabinet, and Cabinet of T. G. Lea. Diam. .30, Length .25 of an inch.

Remarks.—My brother, T. G. Lea, sent me several of this species, with other *Helices* collected near Mobile. A single specimen only was perfect in the lip, the remainder being immature. It is not easily confounded with any other of our species. In form it is somewhat like *H. jejuna*, (Say,) but is not more than one-fourth the size, and differs in colour. There is rather a deep groove behind the lip, which is reddish. The umbilicus is small.

HELIX MINUTISSIMA.

Testâ subglobosâ, suprâ obtuso-cônoideâ, subtus convexâ, fusco-corneâ, minutissimè striatâ, umbilicatâ; spirâ brevi; suturis impressis; anfractibus quaternis, rotundis; aperturâ subrotundâ; labro acuto.

Shell subglobose, above obtusely conical, below convex; brown horn colour, very minutely striate, umbilicated; spire short; sutures impressed; whorls four, round; aperture nearly round; lip acute.

Hab. Vicinity of Cincinnati. T. G. Lea. My Cabinet and Cabinet of T. G. Lea. Diam. .06, Length .04 of an inch.

Remarks.—This is the smallest species, in our country, which has come under my notice. Its very minute longitudinal striæ can only be observed by a powerful lens. The umbilicus is rather large and deep. It is nearly the form of *H. labyrinthica*, (Say,) but is a smaller species, is differently striated, and has no teeth. My brother sent me three specimens, which he informs me were found under wet sticks, and on the margin of a pond.

MELANIA TURGIDA.

Testâ lævi, obtuso-conicâ, inflatâ, crassâ, fasciatâ; spirâ brevi, ad apicem acuminatâ; suturis leviter impressis; anfractibus septenis, planulatis; aperturâ parvâ, formam trapezii habente; columellâ incrassatâ, albâ.

Shell smooth, obtusely conical, inflated, thick, banded; spire short, pointed at the apex; sutures slightly impressed; whorls seven, flattened; aperture small, trapezoidal; columella thickened, white.

Hab. Holston River, East Tennessee. Prof. Troost, and S. M. Edgar. My Cabinet, and Cabinets of Prof. Troost and S. M. Edgar. Diam. .35, Length .55 of an inch.

Remarks.—This is a very short and thick species, having a very large body whorl disposed to be obtusely angular at the middle. The number of bands varies. One of the specimens has a single one, another has two bands, and five have five bands, there being seven specimens before me. That with a single band is of a bright yellow; the others are of a greenish yellow. The aperture is nearly one-half the length of the shell, and twisted at the base.

MELANIA GLABRA.

Testâ lævi, conoideâ, subtenui, nitidâ, tenebroso-castaneâ; spirâ subelevatâ; suturis leviter impressis; anfractibus subplanulatis; aperturâ elongatâ, formam trapezii habente, intus purpureâ; columellâ incurvâ.

Shell smooth, conical, rather thin, shining, dark chestnut colour; spire rather elevated; sutures slightly impressed; whorls rather flattened; aperture elongated, trapezoidal, purplish within, columella incurved.

Hab. Holston River, East Tennessee. Prof. Troost, and S. M. Edgar. My Cabinet, and Cabinets of Prof. Troost and Mr. Edgar. Diam. .32, Length .70 of an inch.

Remarks.—The apex in all the specimens before me is slightly eroded, and therefore the number of the whorls cannot be accurately ascertained; it may be six or seven. The aperture is more than one-third the length of the shell. The superior whorls are disposed to be carinate, and below the sutures the colour is lighter. The columella is much incurved. Within the aperture, indistinct confluent bands may be observed. These are scarcely observable without, but give the shell a very dark aspect, somewhat like *M. rufa*, (nobis.) It is very different, however, in form, from that species.

MELANIA PERFUSCA.

Testâ lævi, conoideâ, subcrassâ, tenebroso-fuscâ; spirâ exsertâ; suturis linearibus; anfractibus subplanulatis; aperturâ grandi, inflatâ, ovatâ, intus pallido-purpureâ.

Shell smooth, conical, rather thick, dark brown; spire exserted; sutures linear; whorls rather flattened; aperture large, inflated, ovate, within pale purple.

Hab. Calf-killer Creek. Tennessee. S. M. Edgar. My Cabinet and Cabinet of Mr. Edgar. Diam. .50, Length 1 inch.

Remarks.—A single specimen, with the spire truncate, is before me. The lower portion is perfect. The apex being destroyed, the number of whorls cannot be ascertained.

The aperture is, I presume, rather more than one-third the length of the shell. The lower part of the margin protrudes considerably. It seems to be nearly allied to *M. ebenum*, (nobis,) but is a larger shell, more inflated, and has a larger aperture, being less elliptical.

MELANIA PICTA.

Testâ lævi, obtuso-conicâ, crassâ, subfusiformi, subviridi, fasciatâ; spirâ subelevatâ; suturis impressis, supernè exaratis; anfractibus octonis, planulatis; aperturâ elongatâ, formam trapezii habente; columellâ incurvâ.

Shell smooth, obtusely conical, thick, subfusiform, greenish, banded; spire rather elevated; sutures impressed, above furrowed; whorls eight, flattened; aperture elongated, trapezoidal; columella incurved.

Hab. Holston River, East Tennessee. Prof. Troost, and S. M. Edgar. My Cabinet, and Cabinets of Prof. Troost and S. M. Edgar. Diam. .30, Length .70 of an inch.

Remarks.—The four specimens before me have each three bands, which with the yellowish tint below the sutures give the shell a lively appearance. The superior whorls are disposed to be bicarinate, and the lower carina being covered with the whorl below, causes a furrow along the suture. The aperture is more than one-third the length of the shell, angular at the base, with rather a large sinus.

MELANIA IMPRESSA.

Testâ transversè et creberrimè sulcatâ, fusiformi, crassâ, rufo-fuscâ; spirâ obtusâ; suturis impressis; anfractibus senis, planulatis; aperturâ ellipticâ, subgrandi, ad basim angulatâ, intus albâ.

Shell transversely and thickly sulcate, fusiform, thick, reddish brown; spire obtuse; sutures impressed; whorls six, flattened; aperture elliptical, rather large, angular at the base, within white.

Hab. Coosa River, Alabama. Dr. Brumby. My Cabinet, and Cabinets of Dr. Griffith, Dr. Foreman, and Mr. J. Clark, of Cincinnati. Diam. .48, Length .81 of an inch.

Remarks.—Dr. Griffith received a single specimen only of this singularly marked species, and this is not entirely perfect at the spire or aperture. The whole surface of this specimen is covered with very minute impressed revolving lines, the body whorl having twenty-four. They are nearly equidistant and very regular. Its aperture is nearly one-half the length of the shell. On the superior part of the columella, there is quite a large callus.* In form and size, it closely resembles the *M. robusta*, herein described.

MELANIA ROBUSTA.

Testâ striatâ, fusiformi, crassâ, luteolâ; spirâ obtusâ; suturis subimpressis; anfractibus senis, subconvexis; aperturâ ellipticâ, magnâ, ad basim angulatâ, intus albâ.

Shell striate, fusiform, thick, yellowish; spire obtuse; sutures rather impressed; whorls six, rather convex; aperture elliptical, large, angular at the base, within white.

Hab. Coosa River, Alabama. Dr. Brumby. My Cabinet, and Cabinets of Dr. Griffith, Dr. Foreman, and Mr. J. Clark. Diam. .60, Length .91 of an inch.

Remarks.—A single specimen, only, of this fine species was obtained by Dr. Griffith. It presents four rather distant large revolving striæ on the body whorl, and two on the next. In other specimens these may be found more numerous, or entirely wanting. The aperture is nearly half the length of the shell.† In form and size, it very closely agrees with *M. impressa*, herein described.

* Other specimens subsequently received, confirm nearly all the other characters.

† In specimens subsequently received, the striæ were found to differ but little.

MELANIA JAYANA.

Testâ tuberculatâ, subfusiformi, crassâ, pallido-cornedâ; spirâ exsertâ; suturis linearibus, curvatis; anfractibus subconvexis, medio impressis, tuberculorum duplici serie cinctis; columellâ incurvatâ, supernè incrassatâ; aperturâ formam trapezii habente, intus albidâ.

Shell tuberculate, subfusiform, thick, pale horn colour; spire exserted; sutures linear and curved; whorls rather convex, impressed in the middle, surrounded by a double series of tubercles; columella incurved, thickened above; aperture trapezoidal, whitish within.

Hab. Cany Fork. De Kalb county, Tennessee. Prof. Troost. My Cabinet, and Cabinets of Dr. Jay and Prof. Troost. Diam. .78, Length 1.20 of an inch.

Remarks.—Dr. Jay had two specimens of this species, and I owe to his kindness the possession of one of them. It very closely resembles the *M. armigera*, (Say,) in most of its characters, but may at once be distinguished by the double row of tubercles, the *armigera* never possessing distinctly more than one row: below the sutures, however, there are sometimes imperfect tubercles, which are caused by the protrusion of the tubercles of the superior whorl. This protrusion also takes place in the *Jayana*, but causes in it only a constant curvature in the linear suture.

The apex of the specimen is much eroded, and consequently I am not sure of the number of the whorls, probably eight or nine. The aperture may be rather more than one-third the length of the shell, and is acutely angular at the base, with rather a deep sinus. The callus above causes a considerable sinus there. The operculum is dark brown, the radii converging at the lower interior edge.

ANCULOSA RUBIGINOSA.

Testâ ovato-gibbosâ, crassâ, lævi, rubiginosâ; spirâ subelevatâ; suturis impressis; anfractibus planulatis; aperturâ enormiter ovatâ, intus albidâ; columellâ crassâ, tenebroso-purpureâ.

Shell ovately gibbous, thick, smooth, rusty colour; spire rather elevated; sutures impressed; whorls flattened; aperture irregularly ovate, within whitish; columella thick, dark purple.

Hab. Warrior River, Alabama. Dr. Brumby. My Cabinet, and Cabinets of Dr. Griffith, Dr. Foreman, and Mr. Clark. Diam. .40, Length .60 of an inch.

Remarks.—A single, and not a very perfect specimen is before me. The middle of the whorl is flattened, indeed a little impressed, and this causes a curve in the outer lip. It is obscurely banded, and the whole of the columella is purple. The aperture is nearly two-thirds the length of the shell. The spire is more exserted than usual in the *Anculosæ*, but not perfect in this specimen. Four whorls are perceptible.*

ANCULOSA GRIFFITHIANA.

Testâ ovato-gibbosâ, crassâ, crebrè et transversè striatâ, fasciatâ; suturis impressis; anfractibus quaternis, planulatis; aperturâ ovatâ, intus fasciatâ; columellâ crassâ, tenebroso-purpureâ.

Shell ovately gibbous, thick, closely and transversely striate, banded; sutures impressed; whorls four, flattened; aperture ovate, within banded; columella thick, dark-purple.

Hab. Coosa River, Alabama. Dr. Brumby. My Cabinet, and Cabinets of Dr. Griffith, Dr. Foreman, and Mr. J. Clark. Diam. .50, Length .60 of an inch.

Remarks.—The distinctive characters of this species, are the transverse striæ and the flattened side. This flatness causes an obtuse angle below, and one above. One of the two specimens, under examination, is more banded, and has a less number of striæ than the other. The aperture is nearly three-fourths the length of the shell.

* Several very fine specimens have been since received, from Dr. Foreman.

ANCULOSA TUBERCULATA.

Testâ ovatâ, crassâ, supernè, tuberculatâ, fuscâ; spirâ brevi; suturis vix impressis; anfractibus subconvexis; aperturâ ovatâ, intus carneâ; columellâ crassâ, maculatâ.

Shell ovate, thick, above tuberculate, brown; spire short; sutures scarcely impressed; whorls slightly convex; aperture ovate, within flesh-coloured; columella thick and spotted.

Hab. Warrior River, Alabama. Dr. Brumby. Cabinet of Dr. Griffith. Diam. .38, Length .50 of an inch.

Remarks.—The above description is made from a single specimen, which is truncate at the apex, as the species of this genus usually are. Three whorls are visible. In a perfect state, it probably has four. The specimen before me has two rows of tubercles. On the superior part of the whorl, and below these, are two parallel indistinct lines, which may, in other individuals, rise into tubercles. In the interior, two purple bands are visible. On the middle of the columella there is a large purple spot. This may not occur in all specimens. The aperture is about two-thirds the length of the shell.

VALVATA BICARINATA.

Testâ orbiculari, supernè planulatâ, bicarinatâ, subcrassâ, supernè corneâ, infernè albidâ, latè umbilicatâ; suturis impressis; spirâ depressâ; anfractibus quaternis, convexis; aperturâ rotundâ, intus albidâ.

Shell orbicular, flattened above, bicarinate, rather thick, horn-coloured above, whitish below, widely umbilicate; sutures impressed; spire depressed; whorls four, convex; aperture rounded, whitish within.

Animal.—Body rather short and white, head large, tapering, slightly enlarged at the anterior termination, with a black mark passing from the neck between the eyes, tapering off and reaching nearly to the end of the snout, where there are two oblique black marks bordered in front by white, and accompanied behind by several irregular white spots, the anterior ones being the larger. Branchia translucent, superior portion blackish, bordered with white spots and occasionally obtruded; eyes round and deep black, placed at the posterior base of the tentacula, surrounded by a white area; tentacula long, rather tapering, obtuse at the end; filament rather short, translucent with longitudinal white lines; foot wide and furcate anteriorly, where minute white spots may be observed. Operculum thin, semitransparent, light horn colour, increment circular and rather coarse.

Hab. Schuylkill River, west side, below Permanent Bridge. H. C. Lea. My Cabinet. Diam. .30, Length .12 of an inch.

Remarks.—In the form of the shell, this species closely resembles the *tricarinata*, (Say.) It differs in having but two carinæ, in having a wider umbilicus, and the spire is more depressed. The animals of the two species differ in form and colour more than the shells.

The head of the *tricarinata* is more cylindrical and enlarged at the termination, where it somewhat resembles the snout of the hog, while that of the *bicarinata* is more conical and without so sudden an enlargement at the end. The colour of the *bicarinata* is lighter. In the black markings they also differ. In the *tricarinata* there is a single blotch anterior to the area between the eyes. In the *bicarinata* this extends also behind this area; and in addition may be observed two quite black marks above the mouth, which the *tricarinata* does not seem to have. The tentacula of the *bicarinata* are larger and more filiform. When in motion, the anterior portions of the lobes of the foot are pointed, and recurved or hooked.

The shell of the *bicarinata* is quite light-coloured beneath, and rather a dark horn colour above, the change of colour taking place a short distance above the periphery of the whorl, between which and the superior carina it is quite dark. The superior carina is large and erect, the inferior one is smaller. All the whorls are visible beneath. Very minute longitudinal striæ cover the whole surface.

Having several living specimens of both these species, I observed them closely with a lens while under water in a glass vessel. On the 15th of May, while I had a *tricarinata* at the focus of my lens, I observed a small apple green, globose object, passing from under the aperture of the shell. This was shortly followed by others, and soon a transparent gelatinous mass became visible. This mass was passed slowly over the right side of the neck, under the pectiniform moveable branchiæ, until entirely discharged against the perpendicular side of the vessel in which it was kept, and there the mass remained attached, the parent having abandoned it immediately. The time was fifteen minutes from the first appearance of the mass until it was fairly discharged. The green globules were the ova, of which I counted thirty in the transparent, globose gelatinous mass, which was not more in diameter than one-twentieth of an inch, the transverse diameter of the shell being about four-twentieths of an inch. In other cases, I found the number of ova to differ; some masses having only ten or twelve.

On the 23d, (eight days after) the ova were so far advanced, as to be changed to a dull faded green, the mass enveloping them having changed by degrees in transparency, and becoming of a slightly ferruginous colour. As yet, no change of bulk or arrangement was observed.

On the 29th, (fourteen days after,) the mass was observed to be opened, and with a lens of considerable power I could plainly see a motion in most of the ova, the rounded form of the shell being easily discerned within.

On the 30th, (fifteen days after) most of the young shells had broken their filmy bonds, only six or seven remaining: their motion was very apparent, and their minute black eyes could be plainly seen. I observed to-day, for the first time, that the *valvata* had the power of swimming, inverted from the surface of the water, like the *Planorbis*, *Physæ*, &c. Most of the young were in that position, and could move comparatively fast. The action of the mouth in the adult, when swimming in this way, was constant, and changed from an oval to a circular form.

From the above observations, we may conclude that the *valvata tricarinata* requires from fourteen to fifteen days to be perfected in the ovum, from the time it is ejected and abandoned by its parent. The *bicarinata*, I have no doubt, requires the same time. Numerous globules were deposited about the glass, which globules appeared all to resemble each other, and nearly all the individuals were of the species *bicarinata*.

PALUDINA ANGULATA.

Testâ inflatâ, tenui, fuscâ, supernè subvaricosâ, infernè transversè et minutè striatâ, minutè perforatâ; spirâ breviusculâ, ad apicem tenebrosâ; suturis impressis; anfractibus quinque, in medio angulatis; aperturâ magnâ, subtriangulatâ, intus subrubiginosâ.

Shell inflated, thin, brown, above somewhat varicose, below transversely and minutely striate, minutely perforate; spire rather short, dark at the apex; sutures impressed; whorls five, angular in the middle; aperture large, subtriangular, within subrubiginous.

Hab. Coosa River, Alabama. Dr. Brumby. My Cabinet, and Cabinets of Dr. Griffith, Dr. Jay, Dr. Foreman, T. G. Lea, and J. Clark. Diam. .80, Length 1.05 of an inch.

Remarks.—This is a very distinct species, being more angular than any I have seen. In the specimen before me, there are three irregular transverse impressions, two above the angle, and one immediately below. The striæ are more distinct on the lower half of the whorl. The first three whorls are very dark. The aperture is nearly one-half the length of the shell, and quite angular at the base.*

PALUDINA COOSAENSIS.

Testâ subglobosâ, tenui, pallidâ, sublævi, perforatâ; spirâ brevi; suturis valdè impressis; anfractibus quinis, rotundatis; aperturâ magnâ, subrotundâ, intus albidâ.

Shell subglobose, thin, pale, rather smooth, perforate; spire short; sutures very much impressed; whorls five, round; aperture large, nearly round, within whitish.

Hab. Coosa River, Alabama. Dr. Brumby. My Cabinet, and Cabinets of Dr. Griffith and Dr. Foreman. Diam. .58, Length .62 of an inch.

Remarks.—This species is remarkable for its round whorls, its width and large deep sutures. The superior part of the whorls is somewhat flattened. The colour is remarkably pale, nearly white. The epidermis is very thin, and under the lens displays very minute, rather regular longitudinal striæ crossed on the body whorl by obsolete striæ. The aperture is nearly one-half the length of the shell.

PALUDINA CYCLOSTOMATIFORMIS.

Testâ subcylindræâ, subcrassâ, pallido-cornæâ, lævi, perforatâ; spirâ exsertâ, ad apicem roseâ, obtusâ; suturis valdè impressis; anfractibus quinis, rotundatis; aperturâ parvâ, subrotundâ, intus salmonis colore tinctâ.

Shell subcylindrical, rather thick, pale horn colour, smooth, imperforate; spire exserted, at the apex rose-coloured and obtuse; sutures very much impressed; whorls five, rounded; aperture small, nearly round, within salmon-coloured.

Hab. Coosa River, Alabama. Dr. Brumby. My Cabinet, and Cabinets of Dr. Griffith, Dr. Jay, L. W. Sloat, and Dr. Foreman. Diam. .32, Length .82 of an inch.

Remarks.—This is a very remarkable species assuming very much the form of an exserted *Cyclostoma*. A single, somewhat worn specimen only, was received. The aperture is rather more than one-third the length of the shell. Its subcylindrical form is very remarkable.†

* Since the above was written, I have received more mature and perfect specimens. They differ from the one described in being darker in the epidermis, and in having four purple broad bands, which are very distinct within the aperture. In these specimens, there is a series of indistinct tubercles above the periphery of the last whorl.

† Since the above description was written, Dr. Jay and Dr. Foreman have placed in my hands specimens from the same locality. The epidermis is perfect, and they are of a greenish horn colour. The interior of the aperture is bluish, while the apex is slightly salmon-coloured.

Read December 16, 1842.

IN a paper which I read before this society, in January of last year, I added fifty-seven new species to the genus *Melania*, and in a subsequent paper, several more were added. Recently Dr. E. Foreman, of Baltimore, very kindly sent to me all the specimens from his cabinet, of the family *Melaniana* and *Peristomiana*, with permission to describe what I might find new. There appeared to me to be twelve undescribed *Melaniæ*, four *Anculosæ* and two *Paludinæ*. These I have described in this paper. In my former memoir, I stated that Lamarck does not mention a single species of *Melania* as inhabiting the rivers of Europe, but since the publication of his great work, Dr. Philippi and some other zoologists, have described a few species from Italy and the Eastern parts of Europe.

The genus *Melania* is greatly developed in the United States, while not a single species has been observed in Great Britain or the western part of the continent. When Lamarck issued his 6th vol. in 1822, he was acquainted with only sixteen recent species, nearly all of which, he says, are exotic to Europe. Since that period our knowledge of this genus has greatly extended, and my catalogue now includes the names of two hundred and sixty-six species. This does not include the *Anculosæ*, which Mr. Say very properly separated from the *Melaniæ*. My catalogue of these embraces thirty-three species.

Of the two hundred and sixty-six* species of the genus *Melaniæ*, forty-four† are in a fossil state, leaving two hundred and twenty-two recent. Of these sixty-one are exotic, and one hundred and sixty-one indigenous. Eighty-eight of these are described in my papers, including the present one, presented to this society.

It is remarkable, that while such a vast development of this genus has taken place here, that as yet we have not observed a single species of the nearly allied genus *Melanopsis* in North America. It ranges in a variety of species from the Caucasus to the Alps. I have in my cabinet three supposed species from South America. One of these, the *crenocarina* of Moricand (a very interesting shell) will, I think, have to be removed to a new genus. The *Braziliensis* of the same author approximates more closely to Lamarck's characteristics, but the callus is absent; and the same remark applies to the *maculata*, (nobis.‡)

* Of these there may be probably twelve or fifteen duplications.

† For many years I have believed that many of Lamarck's fossil *Melaniæ* belonged to other genera, and I find that M. Deshayes, in his notes to the new edition of Lamarck, mentions six as certainly not *Melaniæ*.

‡ Having inadvertently in my former papers duplicated some names, I propose the following changes, *Melania plicatula* to *M. Deshayesiana*, that name being preoccupied by Deshayes. *Melania plicata*, to *M. Menkiana*, that name being preoccupied by Dr. Menke. *Melania exarata*, to *M. arata*, that name being preoccupied by Dr. Menke. *Planorbis lens* to *P. Brogniartiana*, that name being preoccupied by M. A. Brogniart.

MELANIA VANUXEMIANA.*

Testâ striatâ, obtuso-conicâ, solidâ, luteolâ, fasciatâ; spirâ breviusculâ; suturis impressis; anfractibus senis, subconvexis; columellâ supernè incrassatâ; aperturâ ovatâ, albâ.

Shell striate, obtusely conical, solid, yellowish, banded; spire rather short; sutures impressed; whorls six, somewhat convex; columella thickened above; aperture ovate, white.

Hab. Alabama. E. Foreman, M. D. Cabinet of Dr. Foreman. Diam. .42, Length, .73 of an inch.

Remarks.—A very pretty symmetrical species, having the mouth rather more than one-third the length of the shell. A single specimen only is before me. It has five nearly equidistant coarse striæ, and four purple bands. It is somewhat like *M. ovalis*, herein described, but has a wider aperture, and a higher spire. I name it after my friend, Prof. Vanuxem.

MELANIA OVALIS.

Testâ striatâ, fusiformi, solidâ, luteâ, fasciatâ; suturis valdè impressis; anfractibus senis, subconvexis; aperturâ ovatâ, constrictâ, intus albidâ.

Shell striate, fusiform, solid, yellow, banded; sutures much impressed; whorls six, rather convex; aperture oval, narrow, whitish within.

Hab. Alabama. E. Foreman, M. D. My Cabinet, and Cabinets of Dr. Foreman, T. G. Lea, and J. Clark. Diam. .40, Length .62 of an inch.

Remarks.—A number of specimens were kindly sent by Dr. Foreman for my inspection, several of which are young, exhibiting on the first two or three whorls very distinct folds. Those of the larger specimens are worn off. The mature specimens are remarkable for their irregularly elliptical form, generally having transverse striæ over the whole surface. The aperture is very regularly ovate, fully the half of the length of the shell.

MELANIA HAYSIANA.

Testâ striatâ, subcylindrâ, solidâ, luteo-fuscâ; spirâ subelevatâ; suturis impressis; anfractibus planulatis; aperturâ parvâ, ellipticâ.

Shell striate, subcylindrical, solid, yellowish brown; spire rather elevated; sutures impressed; whorls flattened; aperture small, elliptical.

Hab. Alabama. E. Foreman, M. D. My Cabinet, and Cabinets of Dr. Foreman, T. G. Lea, and J. Clark. Diam. .43, Length .90 of an inch.

Remarks.—Dr. Foreman submitted many specimens of this species to my examination, and I find them differing very much in form and colour. Some individuals are so full of dark purple bands as to give them a dark hue; others are devoid of bands entirely, and are yellowish. The aperture is contracted, and about one-third the length of the shell. The transverse raised striæ, in some, cover nearly all the whorls, while others are almost or entirely free from them. In general outline it is allied to *M. picta*, (nobis,) all the specimens being more or less eroded at the beaks. I am unable to state the number of whorls, but believe them to be eight or nine. I dedicate this species to my friend Isaac Hays, M. D.

MELANIA EXCISA.

Testâ striatâ, subfusiformi, subcrassâ, luteolâ; spirâ ovato-conicâ; suturis impressis; anfractibus planulatis; aperturâ supernè excisâ, parvâ, ellipticâ, albâ.

Shell striate, subfusiform, rather thick, yellowish; spire ovately conical; sutures impressed; whorls flattened; aperture cut out above, small, elliptical, white.

* In this paper I adopt the rules of construction laid down in botanical nomenclature, (see Linley's Elements,) where it is usual, when species are named after individuals who discover them, to use the genitive; when in compliment, the adjective.

Hab. Alabama. E. Foreman, M. D. My Cabinet, and Cabinets of Dr. Foreman, T. G. Lea, and J. Clark. Diam. .40, Length .64 of an inch.

Remarks.—This shell is very remarkable for the cut in the superior part of the outer lip, very similar to some species of *Pleurotoma*. This cut extends nearly one-fifth round the whorl, leaving immediately below the suture an elevated ridge. There are nearly three whorls of this specimen perfect, and the cicatrix shows the cut to have extended in due proportion thus far. The aperture is rather small, and rather more than one-third the length of the shell. On the spire there is a slight disposition to plication. The apex being eroded, the number of whorls is not certain, perhaps six. This specimen has three revolving purple bands.

For the first time we now observe in the *Melania* a species with a pleurotomose lip. In all its other characters it is a true *Melania*, resembling most, perhaps, *M. Vanuxemiana*, herein described. A character so anomalous in this family, caused me to doubt the propriety of retaining it here. But the absence of the animal, and the fact that I have before me a new species, with the other characteristics of the genus *Anculosa*, having in a minor degree this pleurotomose character, induces me merely to propose a name provisionally for it. The animal may be on examination different; should it prove so, it may then be called *Schizostoma*, Σχίζω, to cut, Στόμα, a mouth.

Under the microscope may be observed, in this species, very minute undulating revolving striæ.

MELANIA ORDIANA.

Testâ striatâ, pyramidatâ, crassâ, tenebroso-fuscâ; spirâ exsertâ; suturis valdè impressis; anfractibus planulatis; aperturâ formam rhombi habente, parvâ, albidâ.

Shell striate, pyramidal, thick, dark brown; spire drawn out; sutures deeply impressed; whorls flattened; aperture rhombic, small, whitish.

Hab. Alabama. E. Foreman, M. D. My Cabinet, and Cabinets of Dr. Foreman, T. G. Lea, and J. Clark. Diam. .52, Length 1.25 of an inch.

Remarks.—A single specimen only of this species is before me, and that unfortunately is decollate, in having lost, probably, four or five whorls: the four lower whorls are perfect. The outer lip is much curved, giving the aperture an auger-like appearance, and causing the channel to be much impressed. On the body whorl there are four rather distant elevated striæ, three of which are large: the whorls above exhibit two. The aperture is about one-fourth the length of the shell. This species resembles *M. canaliculata*, (Say,) and *M. annulifera*, (Con.) It has not the channel of the former, and differs from the latter, in having deeply impressed sutures in the form of the aperture, in the outer lip, and in the striæ. I dedicate it to my old friend, George Ord, Esq.

MELANIA BREVIS.

Testâ striatâ, subcylindrâ, subsolidâ, luteâ; spirâ breviusculâ; suturis impressis; anfractibus planulatis; columellâ supernè incrassatâ; aperturâ ovatâ, albâ.

Shell striate, subcylindrical, somewhat solid, yellow; spire rather short; sutures impressed; whorls flattened; columella thickened above; aperture ovate, white.

Hab. Alabama. E. Foreman, M. D. Cabinet of Dr. Foreman. Diam. .41, Length .60 of an inch.

Remarks.—A single specimen only of this species is before me. The apex being eroded, the number of whorls cannot with certainty be ascertained: there appear to be about five. On this specimen, there are eight indistinct impressed striæ, and several low, irregular folds on the body whorl, which may be more distinct on the superior whorls when found perfect. The aperture is about half the length of the shell.

MELANIA OLIVA.

Testâ striatâ, ellipticâ, solidâ, fuscâ; spirâ breviusculâ; suturis valdè impressis; anfractibus convexis; columellâ incurvatâ, supernè incrassatâ; aperturâ ovata, albâ.

Shell striate, elliptical, solid, brown; spire rather short; sutures much impressed; whorls convex; columella incurved, thickened above; aperture ovate, white.

Hab. Alabama. E. Foreman, M. D. My Cabinet, and Cabinet of Dr. Foreman. Diam. .50, Length 1 inch.

Remarks.—This is a ponderous and rather large species, with not very distinct striæ on the few specimens before me. The superior part of the columella is quite callous. The apex of each is too much eroded to designate the number of the whorls. The aperture is rather small, and contracted. One of the specimens is rather coarsely plicate.

MELANIA FOREMANI.

Testâ tuberculatâ, pyramidatâ, subcrassâ, luteo-fuscâ; spirâ elevatâ; suturis enormiter lineatis; anfractibus novenis, planulatis; aperturâ productâ, ad basim angulata et canaliculatâ, intus albidâ.

Shell tuberculate, pyramidal, rather thick, yellowish brown; spire elevated; sutures irregularly lined; whorls nine, flattened; aperture elongated, angular and channelled at the base, within whitish.

Hab. Alabama. E. Foreman, M. D. My Cabinet, and Cabinets of Dr. Foreman, T. G. Lea, and J. Clark. Diam. .52, Length 1.28 of an inch.

Remarks.—A fine, large, symmetrical species, furnished with a row of closely set tubercles on the middle of the whorl, and several irregular transverse striæ disposed to be tuberculate. The seven or eight specimens before me are very similar, differing but little in form or colour. The oldest one is rather browner. It is remarkable for its regular pyramidal form. The aperture is contracted, and rather more than one-third the length of the shell. I have great pleasure in dedicating it to Dr. Foreman, to whose kindness I owe the specimen in my cabinet.

MELANIA TORQUATA.

Testâ tuberculatâ, subfusiformi, nitidâ, subtenui, luteâ; spirâ subelevatâ; suturis impressis; anfractibus septenis, subconvexis; aperturâ productâ, ad basim angulatâ, intus albida.

Shell tuberculate, subfusiform, shining, rather thin, yellow; spire rather elevated; sutures impressed; whorls seven, somewhat convex; aperture elongated, angular at the base, within whitish.

Hab. Tennessee. E. Foreman, M. D. My Cabinet. Diam. .42, Length .80 of an inch.

Remarks.—This is a very beautiful species, of which I have only one specimen before me. The necklace-like row, (hence its name,) of small closely set tubercles, gives it an attractive appearance. Each successive whorl covers up these tubercles as well as several striæ below them, leaving the whole spire smooth. The aperture is rather contracted, and nearly half the length of the shell. The outer lip is sharp, and very much curved. It has some resemblance to *M. alveare*, (Con.) but is a larger shell, less solid, and more fusiform.

MELANIA PRODUCTA.

Testâ plicatâ, subfusiformi, subtenui, corneâ; spirâ obtuso-conicâ; suturis impressis; anfractibus octonis, planulatis; aperturâ ellipticâ, albidâ.

Shell folded, subfusiform, rather thin, horn-coloured; spire obtusely conical; sutures impressed; whorls eight, flattened; aperture elliptical, whitish.

Hab. Tennessee. E. Foreman, M. D. My Cabinet, and Cabinet of Dr. Foreman. Diam. .57, Length .70 of an inch.

Remarks.—This species has rather distant folds on the first six whorls, and a disposition to tuberculation on the middle of the lower whorl, the superior part being disposed to be striate. The base of the columella is twisted, and the channel well impressed. The aperture is quite one-half the length of the shell.

MELANIA CURVATA.

Testâ obtuso-carinatâ, subpyramidatâ, subcrassâ, tenebroso-corneâ; spirâ subelevatâ; suturis impressis; anfractibus octonis, convexis; aperturâ parvâ, curvatâ, albidâ.

Shell obtusely carinate, somewhat pyramidal, rather thick, dark horn colour; spire somewhat elevated; sutures impressed; whorls eight, convex; aperture small, curved, whitish.

Hab. Tennessee. E. Foreman, M. D. My Cabinet, and Cabinet of Dr. Foreman. Diam. .40, Length .73 of an inch.

Remarks.—The two specimens before me vary very little in all their characters. This is a very distinct species, resembling more, perhaps, *M. conica* (Say) than any other. The whorls are close, and about the middle are placed two or three obscure carinæ, which cause a slightly impressed channel. The aperture is small, being a little more than one-third the length of the shell. The outer lip is sharp and very much curved, causing the base of the columella to be twisted. In one of the specimens an obscure band near the base in the interior may be observed.

MELANIA EXPANSA.

Testâ lævi, subfusiformi, subcrassâ, luteolâ; spirâ obtuso-conicâ; suturis subimpressis; anfractibus quinis, subconvexis; aperturâ magnâ, expansâ, albidâ.

Shell smooth, somewhat fusiform, rather thick, yellowish; spire obtusely conical; sutures somewhat impressed; whorls five, slightly convex; aperture large, expanded, whitish.

Hab. Alabama. E. Foreman, M. D. Cabinet of Dr. Foreman. Diam. .43, Length .63 of an inch.

Remarks.—A solitary specimen of this was among the shells sent by Dr. Foreman. In form it resembles *M. variabilis*, (nobis,) but may be distinguished from that species in being larger, and having a larger proportionate aperture, which is more expanded. The aperture is full one-half the length of the shell. The specimen under examination has four bands, and the yellow epidermis is nearly covered with a deposit of the oxide of iron.

ANCULOSA INCISA.

Testâ lævi, ovato-gibbosâ, crassâ, luteo-fuscâ; spirâ brevis; anfractibus quaternis, planulatis; columellâ supernè incrassatâ; aperturâ magnâ, ovatâ, albâ.

Shell smooth, ovately gibbous, thick, yellowish brown; spire short; whorls four, flattened; columella thickened above; aperture large, ovate, white.

Hab. Alabama. E. Foreman, M. D. My Cabinet, and Cabinets of Dr. Foreman, T. G. Lea, and J. Clark. Diam. .44, Length .64 of an inch.

Remarks.—Four individuals of this species are before me, and all of them have, though in a less degree, the remarkable pleurotomose character, described in the remarks on *Melania excisa*, page 25.

The observations there made in regard to the genus, may in part be referred to for this shell. It might be supposed, that this cut could be caused by a fracture in the shell, or injury to the animal. But this is by no means the case. On the contrary, in one of the individuals where a fracture took place by the breaking off of the middle of the lip, this was subsequently replaced, and the curved edge reinstated as before. This species resembles in form *Anculosa Foremani*, herein described; but the spire is more exserted. All the four specimens have three brown bands more or less distinct, and the callus on the superior part of the columella is slightly maculate with brown. The aperture is about two-thirds the length of the shell.

ANCULOSA FOREMANI.

Testâ lævi, ovato-gibbosâ, crassâ, luteâ, transversè lineatâ; spirâ brevissimâ; suturis impressis; anfractibus subplanulatis; columellâ percrassâ, aperturâ submagnâ, ellipticâ, albidâ.

Shell smooth, ovately gibbous, thick, yellow, transversely lined; spire very short; sutures impressed; whorls somewhat flattened; columella very thick; aperture rather large, elliptical, whitish.

Hab. Alabama. E. Foreman, M. D. My Cabinet, and Cabinet of Dr. Foreman. Diam. .40, Length .50 of an inch.

Remarks.—Two of the three specimens under examination have very distinct, capillary, revolving, deep brown lines between the top of the aperture and the base. Above that the space is nearly filled up with two indistinct, interrupted lines which give a clouded appearance to that portion of the shell. The third specimen is of a brighter yellow with all the lines nearly obliterated. In form this species very closely resembles *An. flammata* herein described, but the capillary lines distinguish it at once, and the columella is thicker at the base. In all the three specimens a slight tinge of brown may be distinguished on the middle of the columella. I dedicate the species to Dr. Foreman, who kindly placed a specimen in my cabinet.

ANCULOSA SOLIDA.

Testâ lævi, ellipticâ, subcrassâ, luteo-fusâ; spirâ exsertâ; suturis impressis; anfractibus planulatis; columellâ incurvatâ, supernè et infernè incrassatâ; aperturâ elongatâ, ellipticâ, albâ.

Shell smooth, elliptical, rather thick, yellowish brown; spire somewhat drawn out; sutures impressed; whorls flattened; columella incurved, thickened above and below; aperture elongated, elliptical, white.

Hab. Alabama. E. Foreman, M. D. My Cabinet, and Cabinet of Dr. Foreman. Diam. .38, Length .60 of an inch.

Remarks.—Three specimens only were sent to me by Dr. Foreman. They differ very little from each other, except that one exhibits a few indistinct elevated revolving striæ. Other specimens may present this character more strongly. Neither of the specimens have a perfect spire, the apices being eroded. The number of whorls I should think, however, were five. The aperture seems to be rather more than half the length of the shell. The columella is remarkable for its callus near the base as well as having another above.

ANCULOSA FLAMMATA.

Testâ lævi, ovato-gibbosâ, crassâ, luteolâ, obliquè flammâtâ; spirâ brevissimâ; suturis impressis; anfractibus subplanulatis; columellâ supernè percrassâ; aperturâ submagnâ, ellipticâ, albidâ.

Shell smooth, ovately gibbous, thick, yellowish, obliquely flammulate; spire very short; sutures impressed; whorls somewhat flattened; columella very thick above; aperture rather large, elliptical, whitish.

Hab. Alabama. E. Foreman, M. D. Cabinet of Dr. Foreman. Diam. .38, Length .49 of an inch.

Remarks.—A single specimen, broken on the outer lip, is before me. The middle of the whorl is slightly flattened. The spire is eroded, and little more than one whorl is presented. The epidermis on this part is nearly perfect, and exhibits a fine yellow ground with thickly set, oblique, flammulate, brown bands. This species is very distinct from any I know, not being aware that flammulate bands have been before observed in any of this genus. In a single species of *Melania*, somewhat similar bands exist, the *M. breviformis* (Pareyss,) from New Holland.

PALUDINA INCRASSATA.

Testâ lævi, ellipticâ, subtenui, imperforatâ, tenebroso-corneâ; suturis subimpressis; anfractibus subconvexis; columellâ supernè incrassatâ; aperturâ subrotundatâ, parvâ, intus cæruleâ.

Shell smooth, elliptical, rather thin, imperforate, dark horn colour; sutures somewhat impressed; whorls somewhat convex; columella thickened above; aperture rather round, small, within bluish.

Hab. Alabama. E. Foreman, M. D. Cabinet of Dr. Foreman. Diam. .52, Length . . . of an inch.

Remarks.—Rather more than the first whorl only of the specimen before me is perfect, and I would not have proposed it for a new species, but that this part differs from any which has come under my notice. The callus on the superior part of the columella is very like that we find in the genus *Anculosa*. The aperture is smaller than usual in this genus. The upper whorls being decollate, neither their number nor the form of the spire can be given.

PALUDINA COARCTATA.

Testâ lævi, ovatâ, coarctatâ, crassâ, imperforatâ, olivaceâ; spirâ exsertâ; suturis valdè impressis; anfractibus planulatis; aperturâ subparvâ, ovatâ, albâ.

Shell smooth, ovate, compressed, thick, imperforate, olive colour; spire drawn out; sutures much impressed; whorls flattened; aperture rather small, ovate, white.

Hab. Alabama. E. Foreman, M. D. Cabinet of Dr. Foreman. Diam. .50, Length .98 of an inch.

Remarks.—This species, of which a single specimen only was received, differs from all of the genus which has come under my notice. It is remarkable for its compressed form, the body whorl being quite flattened. The apex is eroded, which prevents the number of whorls being ascertained: there appear to be five. The aperture is less round than usual in this genus, and may be rather more than half the length of the shell.

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Description of New Fresh Water and Land Shells. By Isaac Lea.

Read August 18, 1843.

Heretofore, very little examination of the rivers and lakes of Florida has been made for the *mollusca* inhabiting them, two or three *Uniones* only having been described from that territory. Recently, I have been fortunate enough to obtain, through the kindness of Dr. Budd, of New York, a number of specimens which were collected by Mr. Samuel B. Buckley, and sent to him. Among them I found only two species before described—the *Unio Blandingianus*, (Nobis,) and *Unio modioliformis*, (Nobis.) The number of new ones proposed in this paper, from that territory, is nine species of *Uniones*. The remainder, from other localities, I owe to the kindness of various friends.

UNIO AMYGDALUM, PL. 39. FIG. 1.

Testâ obovatâ, subinflatâ, valdè inæquilaterali, posticè rotundatâ; valvulis subtenuibus; natibus prominentibus; epidermide politâ, radiatâ; dentibus cardinalibus parvis; lateralibus sublongis curvisque; margaritâ albâ et valdè iridescente.

Shell obovate, somewhat inflated, very inequilateral, rounded behind; valves rather thin; beaks somewhat prominent; epidermis polished, smooth; cardinal teeth small; lateral teeth rather long and curved; nacre white and very iridescent.

Hab. Lake George, Florida. S. B. Buckley.

My cabinet and cabinets of Dr. Budd and Mr. Buckley.

Diam. .5,

Length .9,

Breadth 1.3 inches.

Shell obovate, somewhat inflated, very inequilateral, rounded and compressed behind; umbonal slope rounded; substance of the shell rather thin; beaks somewhat prominent; ligament very short and thin; epidermis smooth and polished, with numerous green rays covering the whole disk; cardinal teeth small, single in the right and double in the left valve; lateral teeth rather long and curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed above the centre of the cavity of the beaks; cavity of the shell deep and rounded; cavity of the beaks rather deep and angular; nacre beautifully pearly and highly iridescent.

Remarks.—This is a small and uncommonly beautiful species. The two specimens before me vary but little in size. They seem to be adult—are about the size of *Unio glans*, (Nobis,) but differ from it entirely in the nacre, in having rays and in being obovate. The epidermis is yellow, but the numerous and close rays which cover the

whole disk give it a dark appearance, particularly on the posterior part. The beaks being eroded, I am unable to give their characters, but there is an appearance of obsolete undulations.

UNIO BUCKLEYI, PL. 39. FIG. 2.

Testâ ellipticâ, inflatâ, valdè inæquilaterali, posticè angulatâ; valvulis crassis; natibus subprominentibus; epidermide tenebroso-fuscâ; dentibus cardinalibus magnis crassisque; lateralibus longis curvisque; margaritâ purpureâ vel salmonis colore tinctâ.

Shell elliptical, inflated, very inequilateral, angular behind; valves thick; beaks rather prominent; epidermis dark-brown; cardinal teeth large and thick, lateral teeth long and curved; nacre purple or salmon-coloured.

Hab. Lake George and Lake Monroe, Florida. S. B. Buckley.

My cabinet and cabinets of Dr. Budd and Mr. Buckley.

Diam. 1.5,

Length 2,

Breadth 3.7 inches.

Shell elliptical, inflated, very inequilateral, angular behind; substance of the shell thick; beaks rather prominent; ligament long and rather thick; epidermis dark-brown, smooth, and shining, with obscure green rays in the young; cardinal teeth large and thick, single in the right and double in the left valve; lateral teeth long, thick, and slightly curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed above the centre of the cavity of the beaks; cavity of the shell rather deep; cavity of the beaks rather deep; nacre purple or salmon-coloured.

Remarks.—A number of specimens of this species are before me, and they present many different forms, differing in many respects as the varieties of the *U. complanatus* do from each other. The prevailing colour of the nacre, which is very brilliant, is salmon, but many are purple—two only are white. The epidermis of all the older specimens is dark-brown—some nearly black, and without rays; the younger are smooth and polished on the outside, with numerous obscure green rays, darker on the posterior slope. The general outline, in most specimens, is like that of *U. Batavus*, (Lam.,) but some individuals approximate to that of *U. ovalis*, (Flem.)

UNIO MINOR, PL. 39. FIG. 3.

Testâ ellipticâ, subinflatâ, valdè inæquilaterali, posticè rotundatâ; valvulis crassis; natibus subprominentibus; epidermide striatâ, subnigrâ; dentibus cardinalibus subgrandibus; lateralibus parvis curvisque; margaritâ albâ et iridescente.

Shell elliptical, rather inflated, very inequilateral, rounded behind; valves thick; beaks rather prominent; epidermis striate, nearly black; cardinal teeth rather large; lateral teeth small and curved; nacre white and iridescent.

Hab. Lake Monroe and Lake George, Florida. S. B. Buckley.

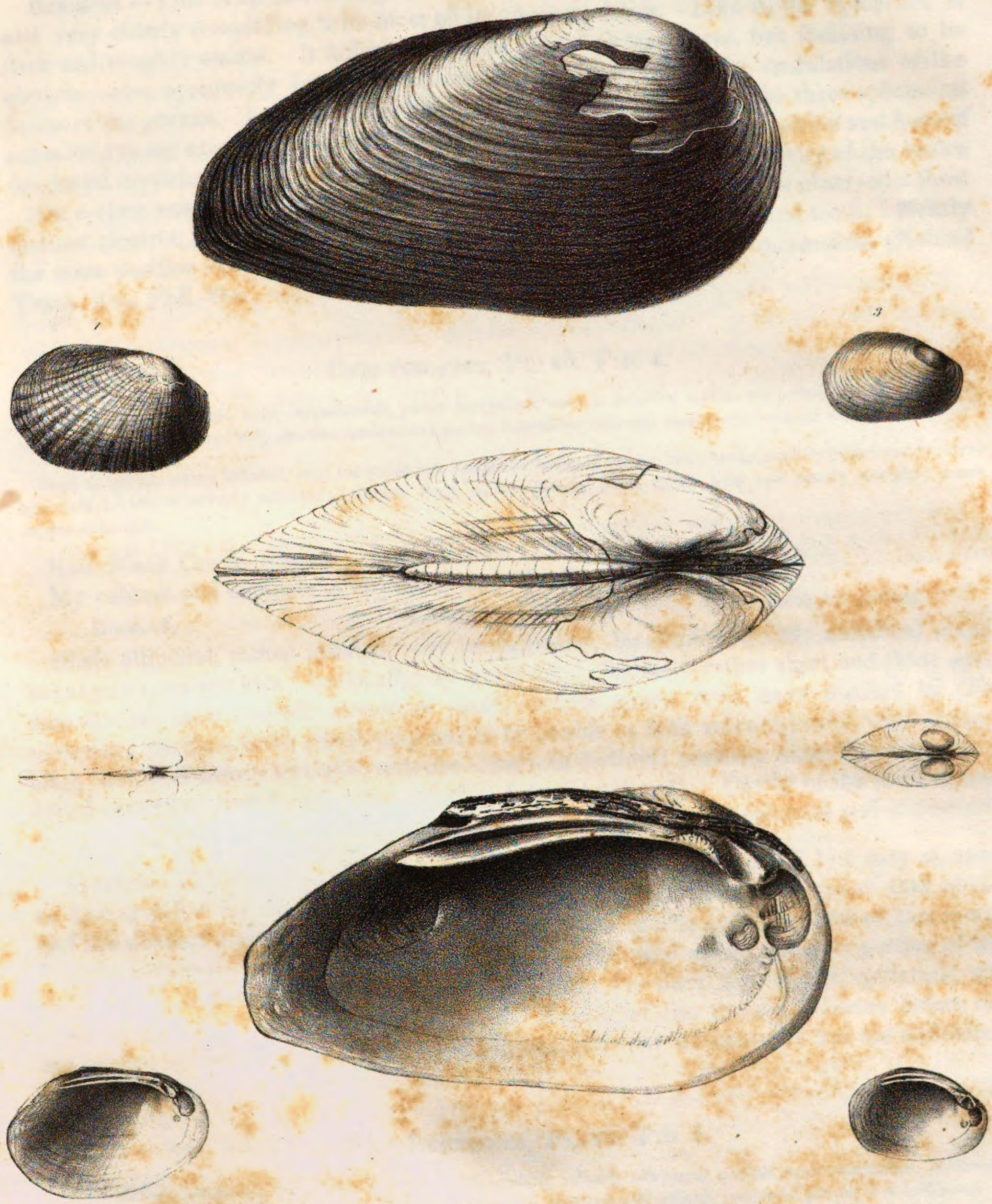
My cabinet and cabinets of Dr. Budd and Mr. Buckley.

Diam. .4,

Length .6,

Breadth .9 of an inch.

Shell elliptical, rather inflated, very inequilateral, rounded behind; umbonal slope rounded; substance of the shell thick, thinner behind; beaks rather prominent; ligament very short and thin; epidermis closely striate, nearly black; cardinal teeth rather large; lateral teeth small and curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed above the centre of the cavity of the beaks; cavity of the shell deep; cavity of the beaks rather deep and angular; nacre pearly white and iridescent.



1. *Unio amygdalum*.
 2. *Unio Buckleyi*.
 3. *Unio minor*.

Stearns & Lill, Phil^a

From Nature & on Squid by Edwards

Remarks.—This is an interesting species, rather smaller than the *U. parvus*, (Barnes,) and very closely resembling it in most of its characteristics. Like it, the epidermis is dark and roughly striate. It differs in form in not being transverse, but inclining to be obovate—also apparently being devoid of the singularly beautiful undulations of the beaks of the *parvus*. I am not, however, positive on this subject, as the three specimens submitted to my examination are all slightly eroded at the beaks. The position and form of the dorsal cicatrices differ. In the *parvus* they form a row across the cavity of the beaks.

On a close examination of the region of the anterior cicatrices, may be observed a third distinct cicatrix, placed on the side of the anterior portion of the cardinal tooth. Nearly the same position of a cicatrix was observed and described in the *U. cucumoides*, (Nobis.) Trans. Am. Phil. Soc., vol. viii. p. 193.

UNIO FUSCATUS, PL. 40. FIG. 4.

Testâ ellipticâ, subinflatâ, valdè inequilaterali, posticè biangulatâ; valvulis tenuibus; natibus vix prominentibus; epidermide tenebroso-fuscâ, obsolete radiatâ; dentibus cardinalibus parvis; lateralibus sublongis subrectisque; margaritâ cupreâ.

Shell elliptical, rather inflated, very inequilateral, biangular behind; valves thin; beaks slightly prominent; epidermis dark-brown, obsoletely radiated; cardinal teeth small; lateral teeth rather long and nearly straight; nacre copper-coloured.

Hab. Black Creek, Florida. S. B. Buckley.

My cabinet and cabinets of Dr. Budd and Mr. Buckley.

Diam. .5, Length .9, Breadth 1.7 inches.

Shell elliptical, rather inflated, very inequilateral, biangular behind; umbonial slope subangular; valves thin; beaks slightly prominent; ligament rather short and thin; epidermis dark-brown—with numerous small obscure green rays, more distinct on the umbones; cardinal teeth small, disposed to be double in both valves; lateral teeth rather long, thin, and nearly straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed under the anterior of the lateral tooth. Cavity of the shell rather shallow; cavity of the beaks small and subangular. Nacre copper-coloured and iridescent.

Remarks.—This species somewhat resembles *Unio pusillus*, (Nobis,) but may at once be distinguished by the absence of the sharp angle of the umbonial slope of that shell, and the distinct angle of its posterior margin.—It differs also in the colour of the nacre. The *fuscatus* is dark on the posterior slope, and compressed at the posterior portion of the shell. The minute rays, which are nearly lost in the dark hue of the epidermis, are closer and more distinct towards the beaks. Neither of the three specimens before me are perfect at the beaks, and I am therefore unable to say whether the tips are undulated in this species.

UNIO BUDDIANUS, PL. 40. FIG. 5.

Testâ oblongâ, compressâ, inequilaterali, posticè subbiangulatâ; valvulis subcrassis; natibus subprominentibus; epidermide subnigrâ; dentibus cardinalibus magnis lamellatisque; lateralibus perlongis subrectisque; margaritâ purpureâ et iridescente.

Shell oblong, compressed, inequilateral, subbiangular behind; valves rather thick; epidermis almost black; cardinal teeth large and lamellar; lateral teeth long and nearly straight; nacre purple and iridescent.

Hab. Lake George and Lake Munroe, Florida. S. B. Buckley.

My cabinet and cabinets of Dr. Budd and Mr. Buckley.

Diam. 1.3,

Length .2,

Breadth 3.9 inches.

Shell oblong, compressed, inequilateral, subbiangular behind; substance of the shell rather thick; beaks rather prominent; ligament long and rather thick; epidermis almost black, smooth on the superior part of the disk; cardinal teeth large and lamellar, single in the right and double in the left valve; lateral teeth long and nearly straight; anterior cicatrices distinct, posterior cicatrices confluent; dorsal cicatrices in the centre of the cavity of the beaks; cavity of the shell shallow; cavity of the beaks small; nacre purple and very iridescent.

Remarks.—But two individuals of this species are before me, one of which is much younger than the other. In outline and general characteristics it resembles *U. complanatus*. It will, no doubt, be found with white and salmon-coloured nacre. In the larger specimen the anterior dorsal margin is somewhat truncate, and there is a like disposition in the younger one.

UNIO TROSSULUS, PL. 40. FIG. 6.

Testâ obliquâ, cuneatâ, inflatâ, valdè inæquilaterali; posticè subangulatâ; valvulis crassis; natibus prominulis, undulatis; epidermide nitidâ, luteâ, radiatâ; dentibus cardinalibus parvulis; lateralibus rectis subbrevisque; margaritâ albâ et valdè iridescente.

Shell oblique, wedge-shaped, inflated, very inequilateral, subangular behind; valves thick; beaks somewhat prominent, undulated; epidermis polished, yellow, radiated; cardinal teeth rather small; lateral teeth straight and rather short; nacre white and very iridescent.

Hab. Monroe Lake, Florida. S. B. Buckley.

My cabinet and cabinets of Dr. Budd and Mr. Buckley.

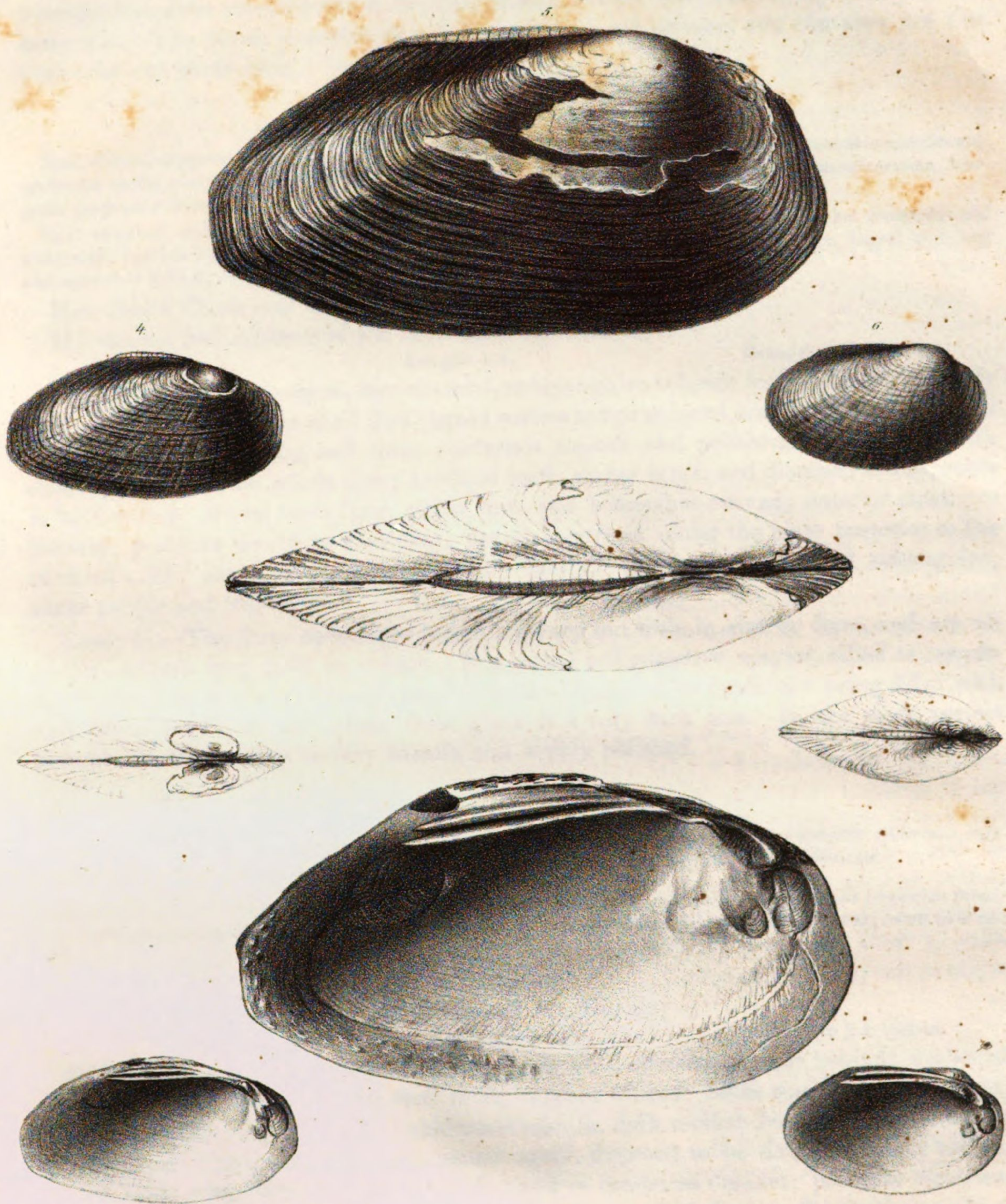
Diam. .6,

Length .8,

Breadth 1.4 inches.

Shell oblique, wedge-shaped, inflated, very inequilateral, subangular behind; umbonial slope rounded; substance of the shell thick; beaks somewhat prominent, and beautifully undulated at the tip; ligament short and very thin; epidermis smooth, polished, yellow, with dark green rays on the posterior portion; cardinal teeth rather small, double in both valves; lateral teeth straight and rather short; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed across the cavity of the beaks; cavity of the shell rather deep and rounded; cavity of the beaks small and subangular; nacre pearly white and beautifully iridescent.

Remarks.—A single individual only of this beautiful and distinct little species is before me. It has somewhat the form of *Unio Troostensis*, (Nobis,) but may easily be distinguished from that species by its rays, and the undulations of the beaks. In this specimen the anterior portion is yellow with obsolete rays, the posterior portion is dark-green with closely set rays, which are, near the margin, so intense as to give a beautiful deep green border to the interior margin. The undulations of the beaks are numerous, beautifully regular, and double. The nacre is very unusually pearly and brilliant. There is a third distinct cicatrix, resembling that in the *U. minor*, herein described. The



1. *Unio fuscatus*.
 2. *Unio Buddianus*.
 3. *Unio trossulus*.

From Nature & on Stone by French

See also Plate 41

trossulus has some resemblance to the *amygdalum*, herein described, being nearly of the same size. The latter, however, is a thinner shell, is not oblique, and the rays are distinct over the whole disk.

UNIO OCCULTUS, PL. 41. FIG. 7.

Testâ ellipticâ, compressâ, inæquilaterali, posticè subbiangulatâ; valvulis tenuibus; natibus subprominentibus undulatisque; epidermide nitidâ, tenebroso-fuscâ, obsoletè radiatâ; dentibus cardinalibus subgrandibus; lateralibus longis subcurvisque; margaritâ purpureâ et iridescente.

Shell elliptical, compressed, inequilateral, subbiangular behind; valves thin; beaks somewhat prominent and undulated; epidermis polished, dark-brown, and obscurely radiated; cardinal teeth rather large; lateral teeth long and somewhat curved; nacre purple and iridescent.

Hab. Black Creek and Lake Monroe, Florida. S. B. Buckley.

My cabinet and cabinets of Dr. Budd and Mr. Buckley.

Diam. .8,

Length 1.2,

Breadth 2.1 inches.

Shell elliptical, compressed, inequilateral, subbiangular behind; umbonial slope slightly angular; substance of the shell thin; beaks somewhat prominent and minutely undulated at the tip; ligament long and thin; epidermis smooth and polished, dark-brown, with obscure rays over the whole disk; cardinal teeth rather large, and disposed to be double in both valves; lateral teeth long, rather thin, and somewhat curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices under the plate posterior to the cardinal tooth; cavity of the shell shallow; cavity of the beaks small and subangular; nacre purple and iridescent.

Remarks.—The three specimens before me vary but little in size or form, and are all purple—others may differ in colour. It is rather a diminutive species, allied to *complanatus*, but may easily be distinguished from that shell. The epidermis being filled with dark-green rays over the whole disk, gives it a very dark hue. In the more perfect individuals, the exterior is very smooth and highly polished.

UNIO MONROENSIS, PL. 41. FIG. 8.

Testâ ellipticâ, subcompressâ, inæquilaterali, posticè subangulatâ; valvulis crassis; natibus prominulis; epidermide rufo-fuscâ; dentibus cardinalibus parvulis; lateralibus longis, lamellatis curvisque; margaritâ lividâ et iridescente.

Shell elliptical, rather compressed, inequilateral, somewhat angular behind; valves thick; beaks somewhat prominent; epidermis reddish-brown; cardinal teeth rather small; lateral teeth long, lamellar, and curved; nacre livid and iridescent.

Hab. Lake Monroe, Florida. S. B. Buckley.

My cabinet and cabinets of Dr. Budd and Mr. Buckley.

Diam. 1.1,

Length 1.7,

Breadth 2.8 inches.

Shell elliptical, rather compressed, inequilateral, somewhat angular behind; umbonial slope angular; substance of the shell thick, thinner behind; beaks somewhat prominent; ligament rather long and thick; epidermis smooth, dark-reddish brown, nearly black on the posterior slope; cardinal teeth rather small, disposed to be double in both valves; lateral teeth long, lamellar, and curved; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed under the anterior end of the lamellar tooth; cavity of the shell rather shallow; cavity of the beaks rather deep and angular; nacre livid and iridescent.

Remarks.—A single specimen only of this species is before me.—Other specimens may vary in some characters. It is most nearly allied to *U. crassidens*, (Lam.,) but is a shorter species, and not so thick. The purple and white colour of the nacre in this specimen gives it a livid appearance—other specimens may be found of a salmon colour. It has a fine nacre with a blackish margin. No rays are visible on this specimen.

UNIO AHENEUS, PL. 41. FIG. 9.

Testâ valdè transversâ, compressâ, valdè inæquilaterali, posticè biangulatâ; valvulis tenuibus; natibus vix prominentibus, undulatis; epidermide tenebroso-fuscâ, radiatâ; dentibus cardinalibus minimis; lateralibus longissimis rectisque; margaritâ cupreâ.

Shell very wide, compressed, very inequilateral, biangular behind; valves thin; beaks scarcely prominent, undulated; epidermis dark-brown and rayed; cardinal teeth very small; lateral teeth very long and straight; nacre copper-coloured.

Hab. Black Creek, Florida. S. B. Buckley.

My cabinet and cabinets of Dr. Budd and Mr. Buckley.

Diam. .5, Length .9, Breadth 2.1 inches.

Shell very wide, compressed, very inequilateral, biangular behind; umbonial slope angular and straight; substance of the shell very thin; beaks scarcely prominent, undulated at the tip; ligament very long and thin; epidermis dark-brown, with numerous dark-green oblique rays on the whole disk; cardinal teeth very small and granulate; lateral teeth very long, thin, and straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed under the anterior end of the lateral tooth; cavity of the shell shallow; cavity of the beaks very small and angular; nacre dark copper-colour and iridescent.

Remarks.—This is a very distinct species, belonging to that group of which the *complanatus* may be considered to be the type. It is remarkable for its dark copper-coloured nacre, which is very splendid. Indistinct undulations may be observed at the tip of the beaks, although the specimens are both eroded there. The cardinal teeth are remarkable in being so small and in being granular, and the position of the dorsal cicatrices is farther removed from the cardinal tooth than usual—even more so than in the *Unio Shepardianus*, (Nobis.) The posterior slope is elevated, compressed, and made very dark by thick green rays. The flattening behind the umbonial slope causes a second angle at the posterior margin.

UNIO NEGLECTUS, PL. 42. FIG. 10.

Testâ oblongâ, inflatâ, inæquilaterali; valvulis tenuibus; natibus subprominentibus; epidermide luteolâ, radiatâ; dentibus cardinalibus parvis; lateralibus longis, tenuibus subcurvisque; margaritâ subaureâ et iridescente.

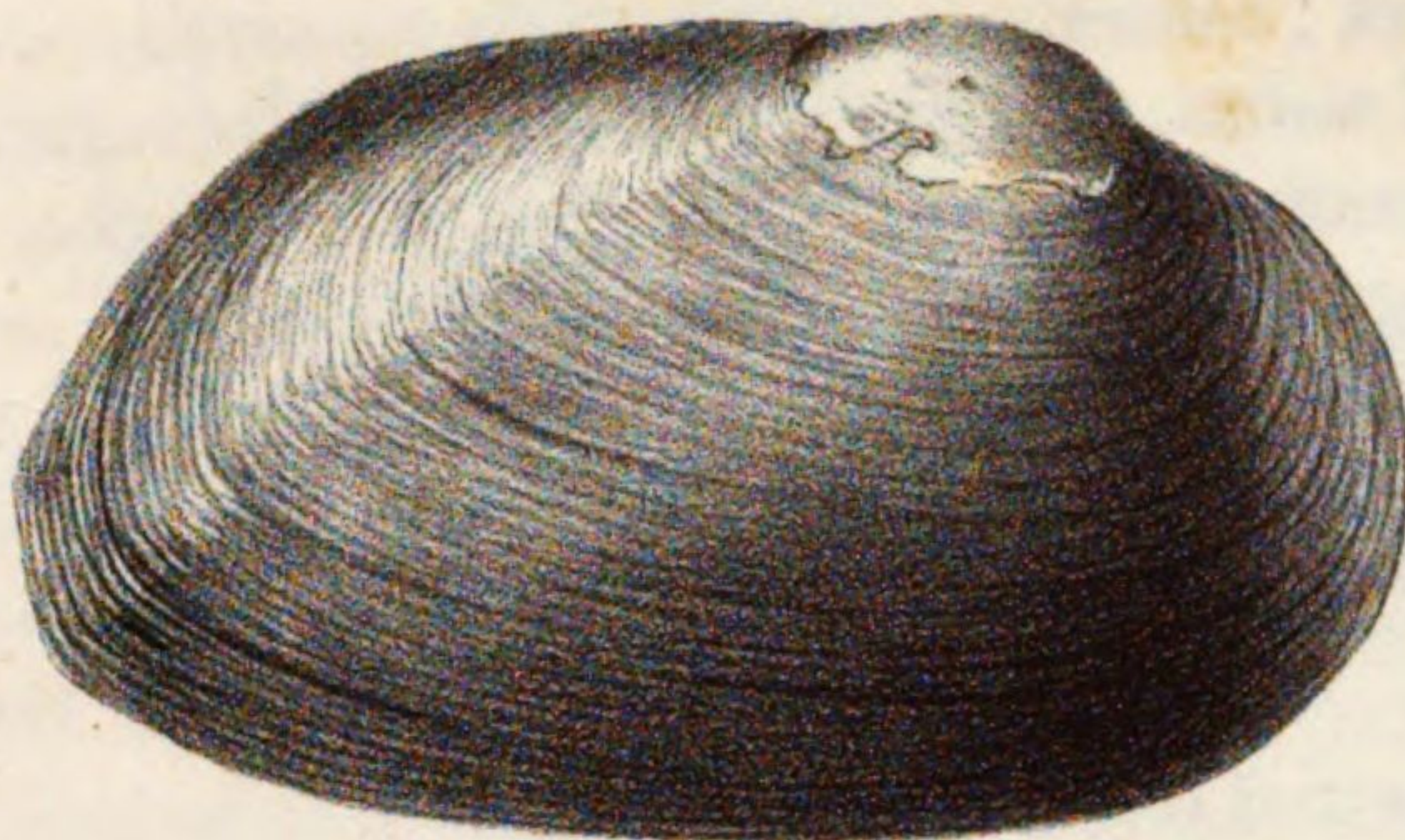
Shell oblong, inflated, inequilateral; valves thin; beaks rather prominent; epidermis yellowish, rayed; cardinal teeth small; lateral teeth long, thin, and somewhat curved; nacre somewhat golden and iridescent.

Hab. North Alabama. Dr. Budd.

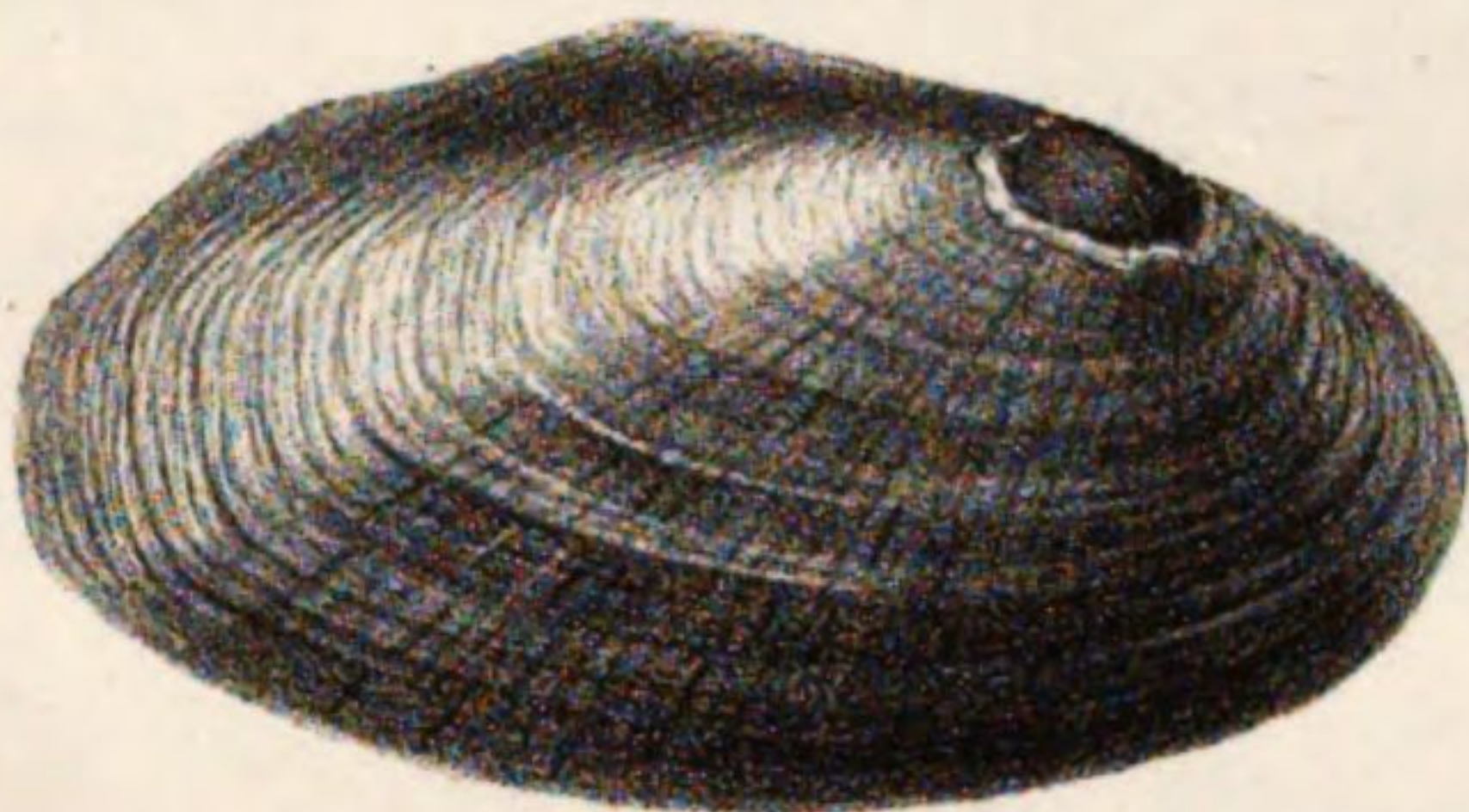
My cabinet and cabinet of Dr. Budd.

Diam. .8, Length 1.2, Breadth 2 inches.

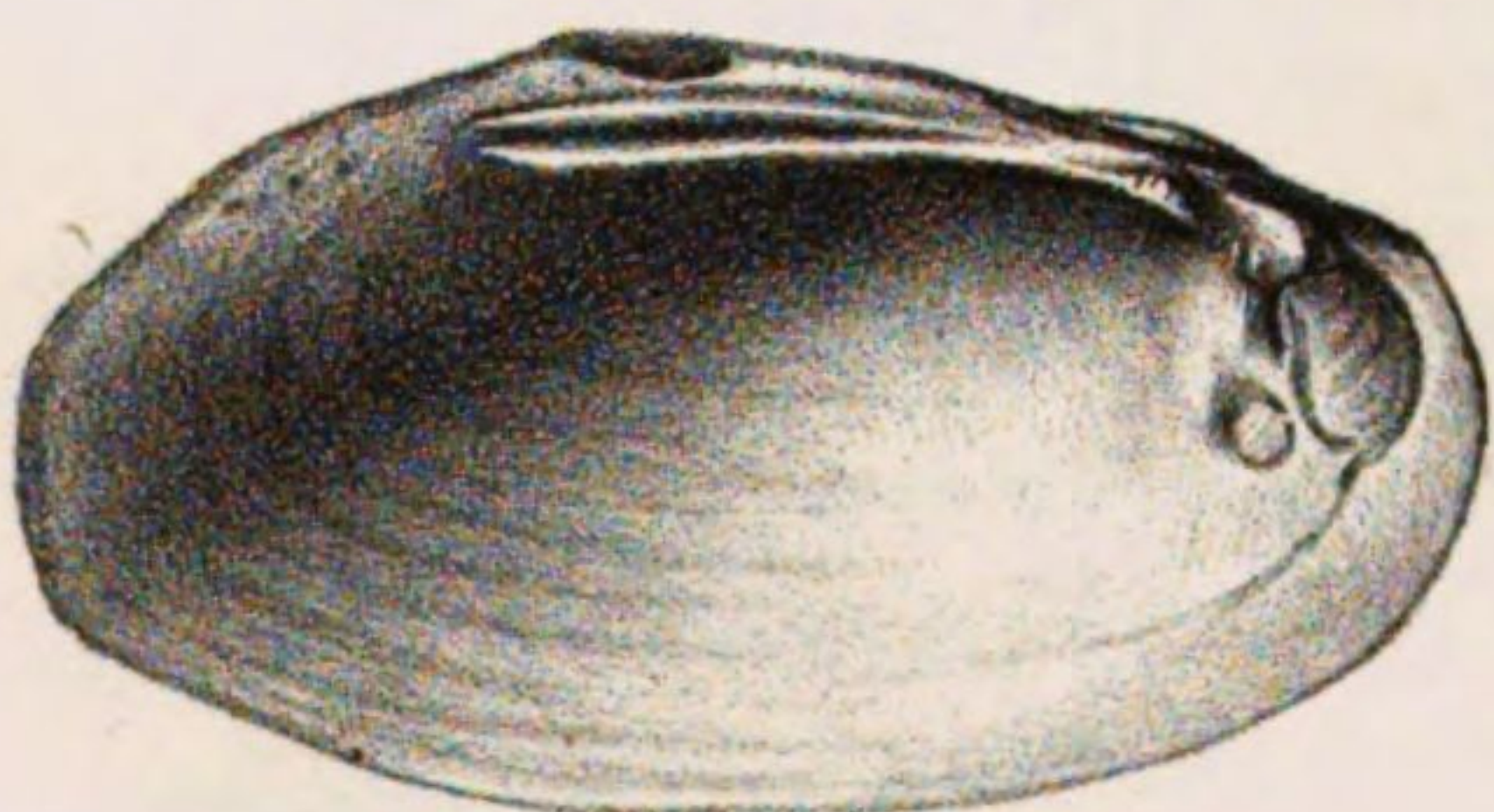
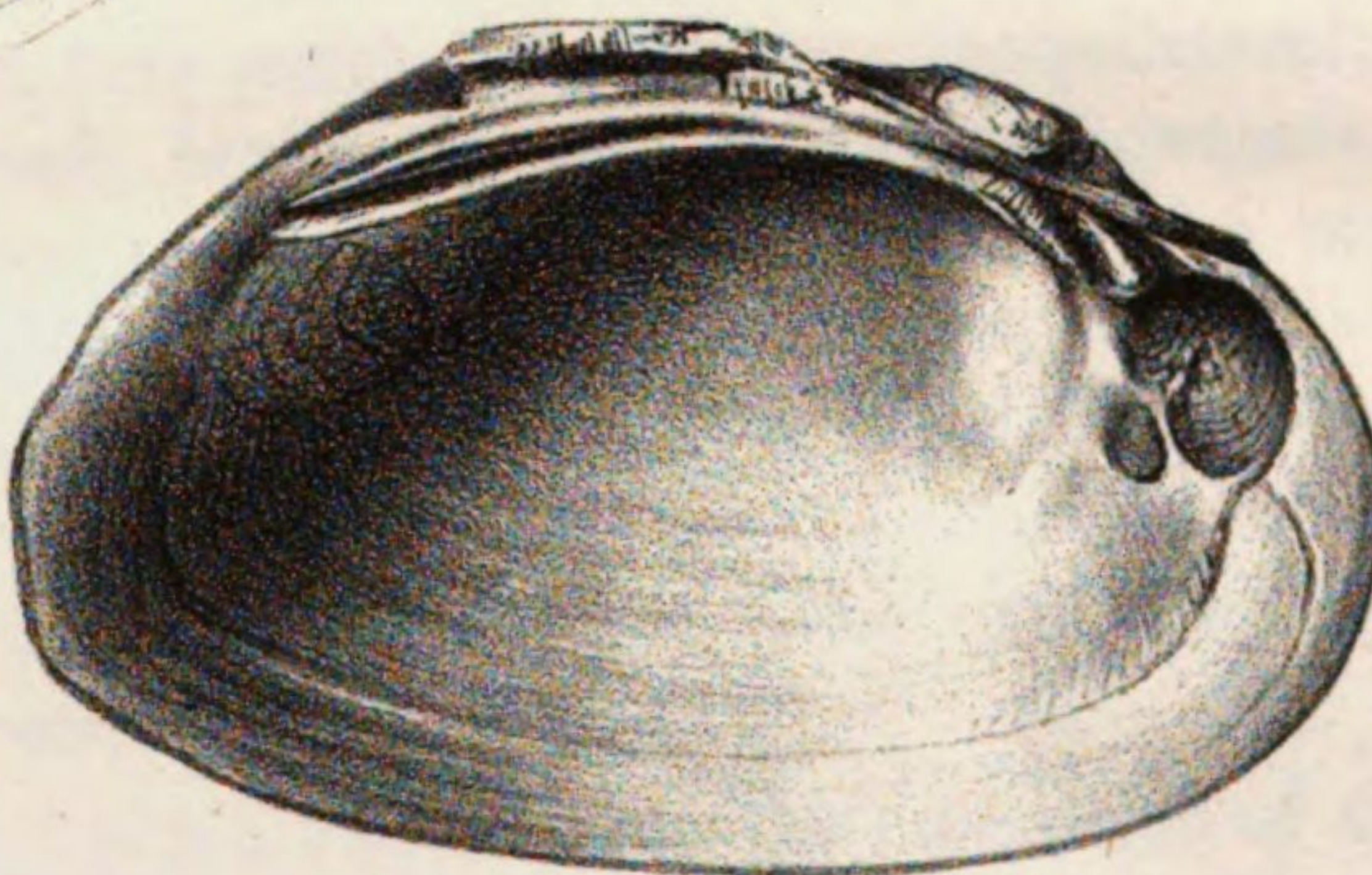
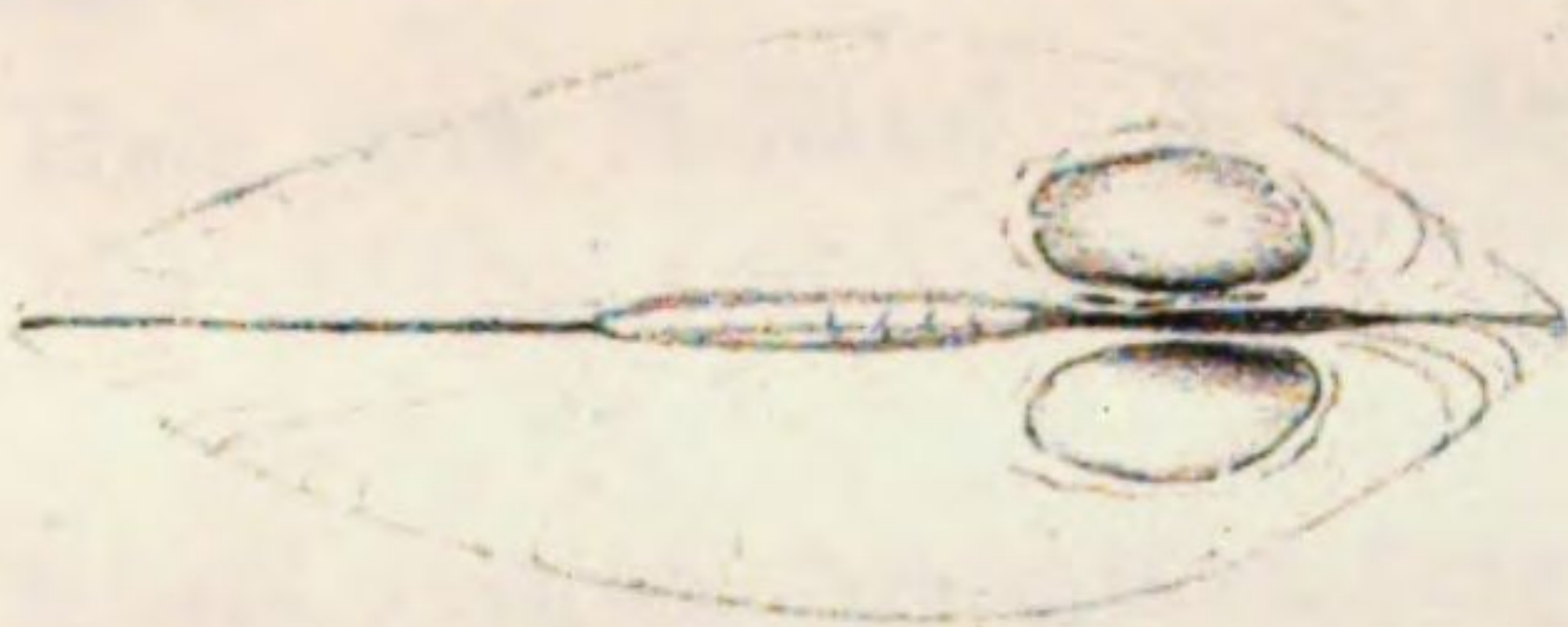
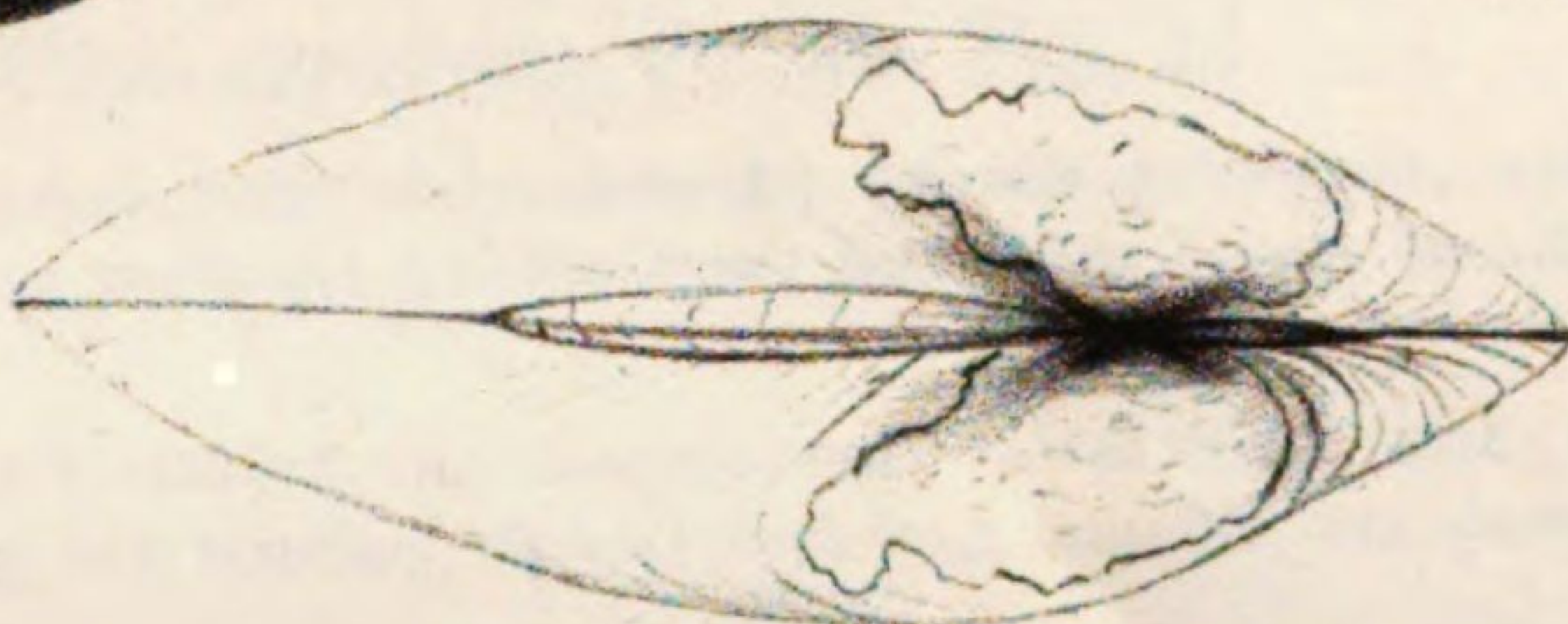
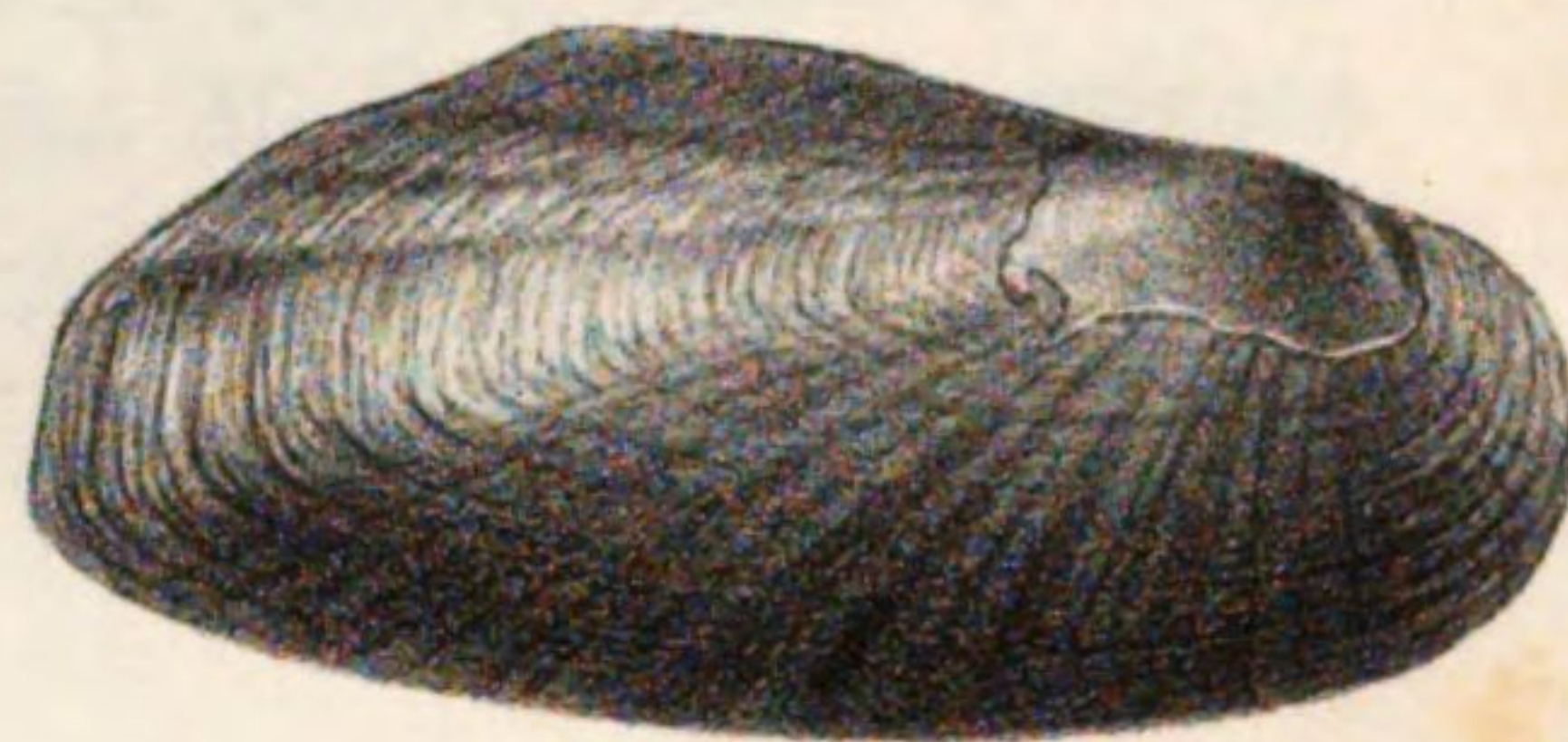
8.



7.



9.



- 7. *Unio occultus*.
- 8. *Unio Monroensis*.
- 9. *Unio aheneus*.

From Nature & on Stone by French.

Sindaco Lith. Phila.

Shell oblong, inflated on the umbonal slope, which is rounded; substance of the shell very thin, thicker before; beaks rather prominent; ligament rather long and thin; epidermis yellow, inclining to saffron, with rather numerous indistinct green rays, more dense on the posterior portion; cardinal teeth small, tuberculate, single in the right and double in the left valve; lateral teeth long, thin, and somewhat curved; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices placed under the cardinal tooth; cavity of the shell deep and rounded; cavity of the beaks shallow and angular; nacre somewhat golden-coloured and very iridescent.

Remarks.—A single specimen of this shell was given to me last winter by Dr. Budd, of New York, and I have delayed the description in the hope of having others for comparison. In its exterior form and appearance, it resembles the *Margaritana marginata*—but its teeth at once distinguish it from that species. The cardinal teeth are remarkably small, being little more than tubercles.

UNIO SUPERBUS. PL. 42. FIG. 11.

Testâ alatâ, triangulari, valdè inflatâ, valdè inæquilaterali; valvulis subcrassis; natibus elevatis; epidermide tenebroso-fuscâ; dentibus cardinalibus perlongis lamellatisque; lateralibus longis, lamellatis curvisque; margaritâ aureâ et valdè iridescente.

Shell winged, triangular, very much inflated, very inequilateral; valves rather thick; beaks elevated; epidermis dark-brown; cardinal teeth very long and lamellar; lateral teeth long, lamellar, and curved; nacre golden and very iridescent.

Hab. New Holland. J. C. Jay, M.D.

My cabinet and cabinet of Dr. Jay.

Diam. 1.9,

Length 3.

Breadth 3.6 inches.

Shell winged, triangular, very much inflated, very inequilateral; substance of the shell rather thick, thinner behind; beaks elevated, rounded; ligament very long and rather thin; epidermis dark-brown, with three obscure rays on the posterior slope; cardinal teeth very long, *double* in the right and *single* in the left valve; lateral teeth long, lamellar, and curved; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices nearly concealed under the plate between the cardinal and lateral teeth; cavity of the shell very deep and rounded; cavity of the beaks very deep and angular; nacre pale golden, brilliant, and iridescent.

Remarks.—I owe to the kindness of Dr. Jay the possession of this beautiful and rare *Unio*. Several of its characteristics are very remarkable; its long cardinal teeth being reversed, the double one being in the right valve and the single one in the left. The nacre is unusually rich and splendid. The beaks of the specimen before me are eroded, but they are perfect enough to observe that the tips must have been thickly set with minute undulations, probably radiating and not concentric. In outline, it has some resemblance to *Unio purpuratus*, (Lam.,) but is more triangular and more inflated.

Dr. Jay received this species from a correspondent in New Holland, accompanied with the *Unio delphinus*, (Nobis.) The latter species does not, however, I believe, exist on that island, but on the coast of Malacca, in the river Souzi, the locality given to me when I described it being erroneous.

UNIO ARATUS, PL. 42. FIG. 12.

Testâ ellipticâ, crebrè et transversè sulcatâ, subcompressâ, inæquilaterali, posticè angulatâ; valvulis subcrassis; natibus prominulis; epidermide pallido-luteâ; dentibus cardinalibus subgrandibus; lateralibus longis curvisque; margaritâ albâ.

Shell elliptical, closely and transversely furrowed, rather compressed, inequilateral, angular behind; valves rather thick; beaks somewhat prominent; epidermis pale-yellow; cardinal teeth rather large; lateral teeth long and curved; nacre white.

Hab.

My cabinet.

Diam. .3,

Length .5,

Breadth .7 of an inch.

Shell elliptical, thickly, regularly, and transversely furrowed, rather compressed, inequilateral, angular behind; umbonal slope rounded; posterior slope with two raised curved lines extending from the beak to the posterior margin; substance of the shell rather thick; beaks somewhat prominent; ligament very short and very thin; epidermis pale-yellow over the whole disk, and without any appearance of rays; cardinal teeth rather large and disposed to be double in both valves; lateral teeth long and curved; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed across the centre of the cavity of the beaks; cavity of the shell rather shallow; cavity of the beaks rather shallow and angular; nacre white.

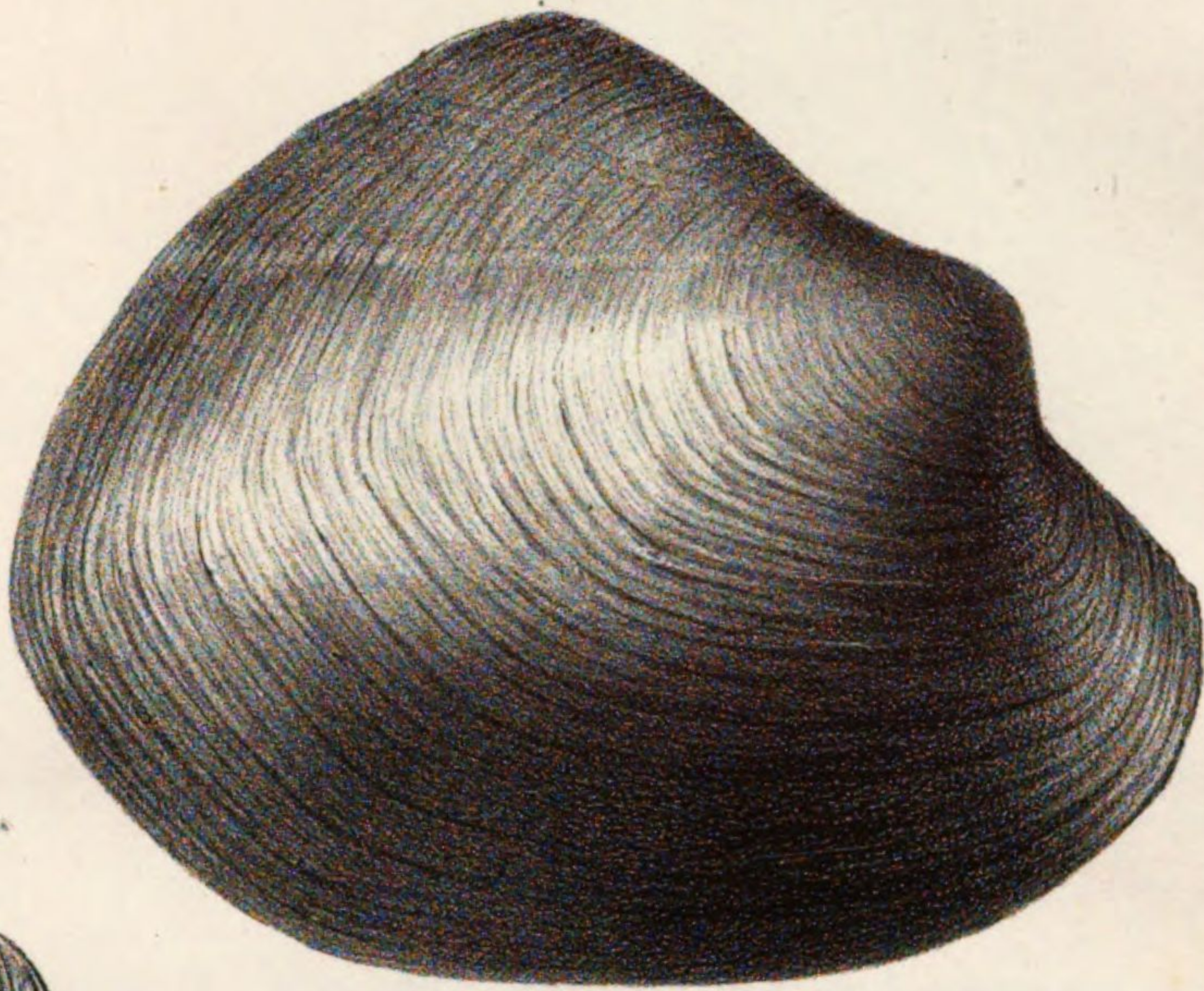
Remarks.—A very remarkable little shell which may prove to be rather a young individual. The regular, transverse, closely-set furrows over the whole disk are very striking, it being the first species which I have seen with this perfect characteristic. The beaks are somewhat eroded, and I do not observe any undulations on them. Small ones may, perhaps, occur on perfect specimens. It seems to be somewhat allied to *Unio stramineus*, (Conrad,) but it differs somewhat in outline, and that species is not regularly furrowed, but rather transversely wrinkled, and is rather a large species, with beautiful undulations at the tip of the beaks.

The habitat of this shell is not known. The person from whom I procured it could not even inform me whether it was exotic or not.

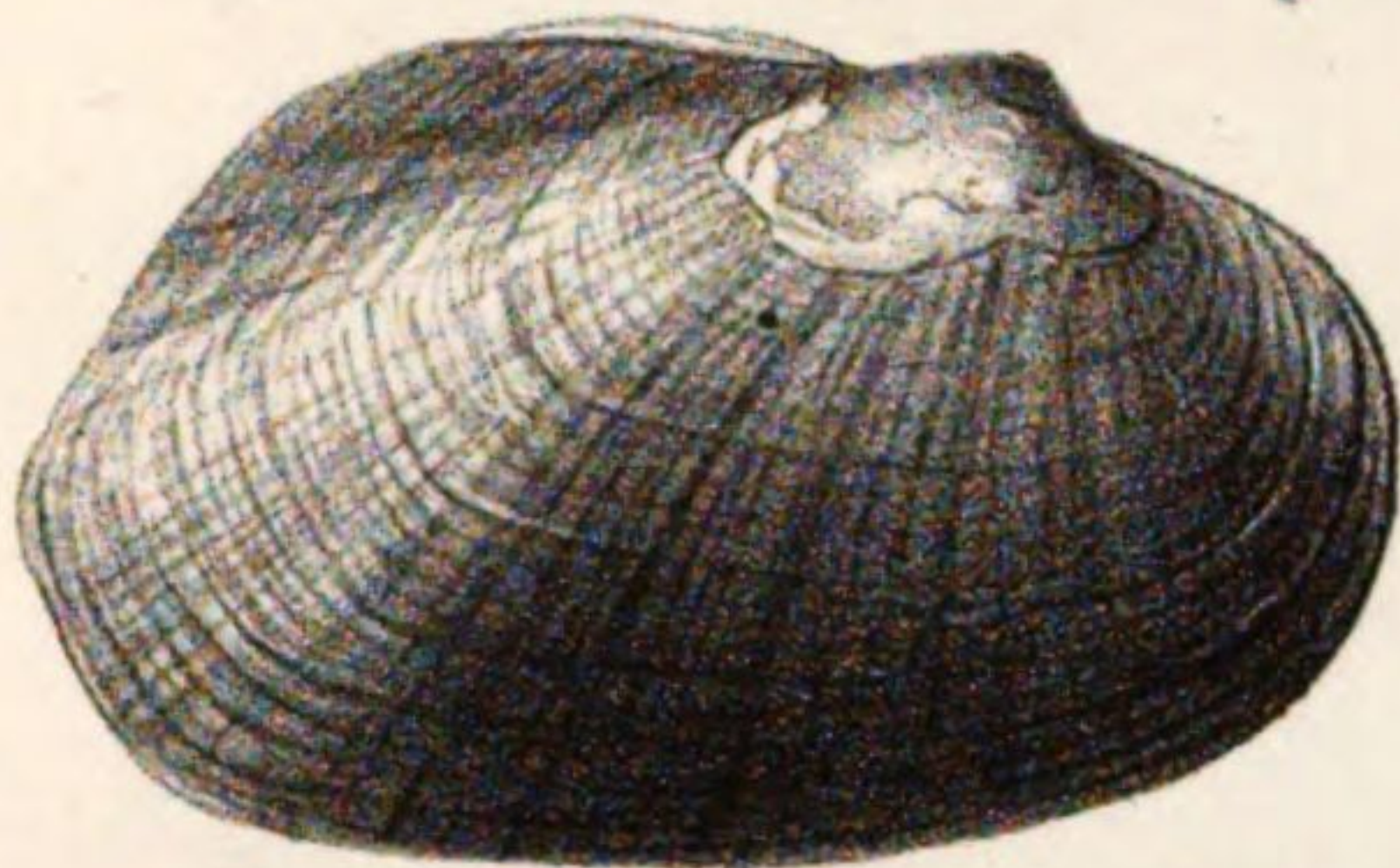
Remarks.—I owe to the kindness of Dr. Jay the possession of this beautiful and rare *Unio*. Several of its characteristics are very remarkable; its long cardinal teeth being reversed, the double one being in the right valve and the single one in the left. The nacre is unusually rich and splendid. The beaks of the specimen before me are eroded, but they are perfect enough to observe that the tips must have been thickly set with minute undulations, probably radiating and not concentric. In outline, it has some resemblance to *Unio purpuratus* (Lam.), but is more triangular and more inflated.

Dr. Jay received this species from a correspondent in New Holland, accompanied with the *Unio delphinus* (Nobis). The latter species does not, however, I believe, exist on that island, but on the coast of Malacca, in the river Soani, the locality given to me when I described it being erroneous.

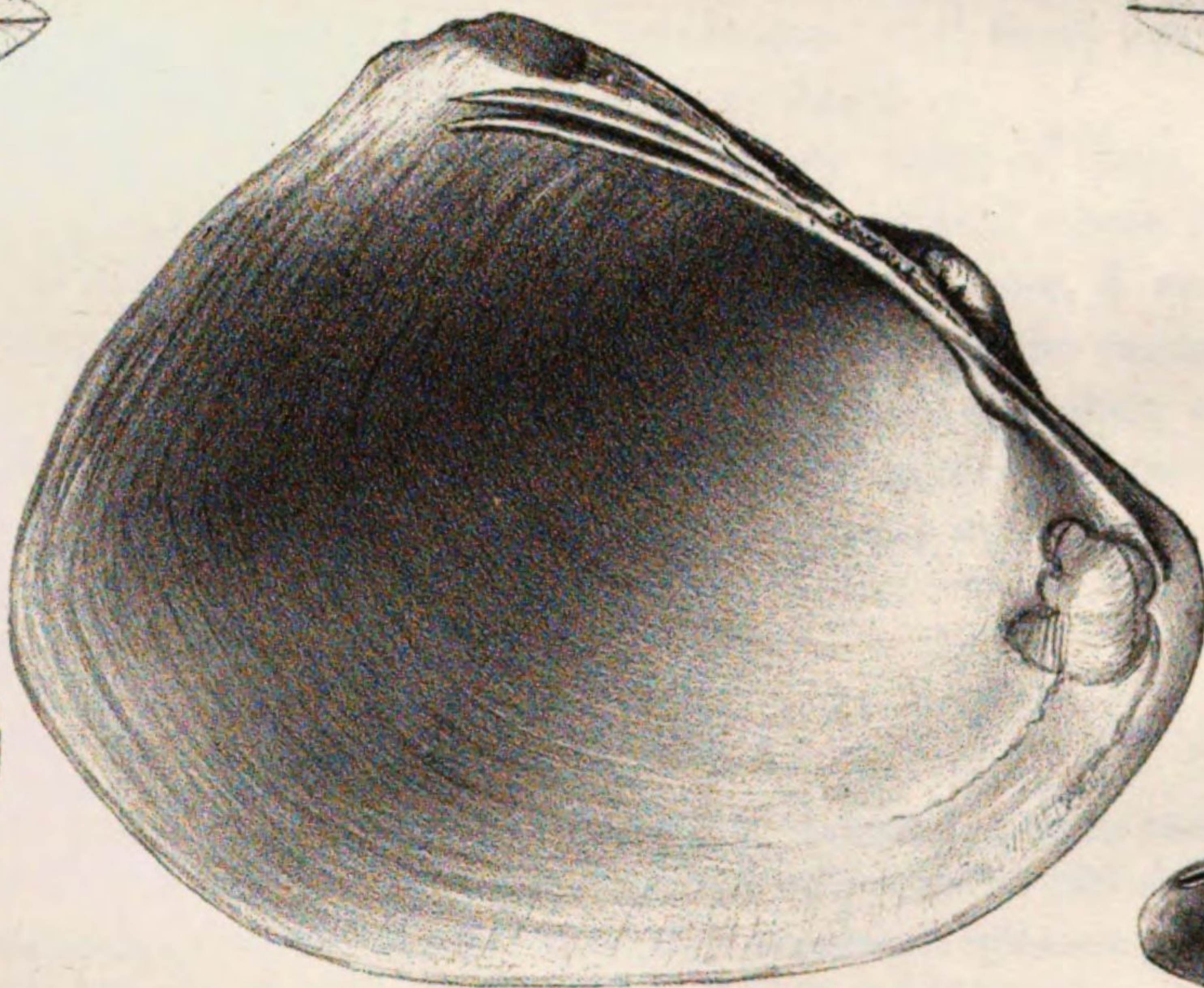
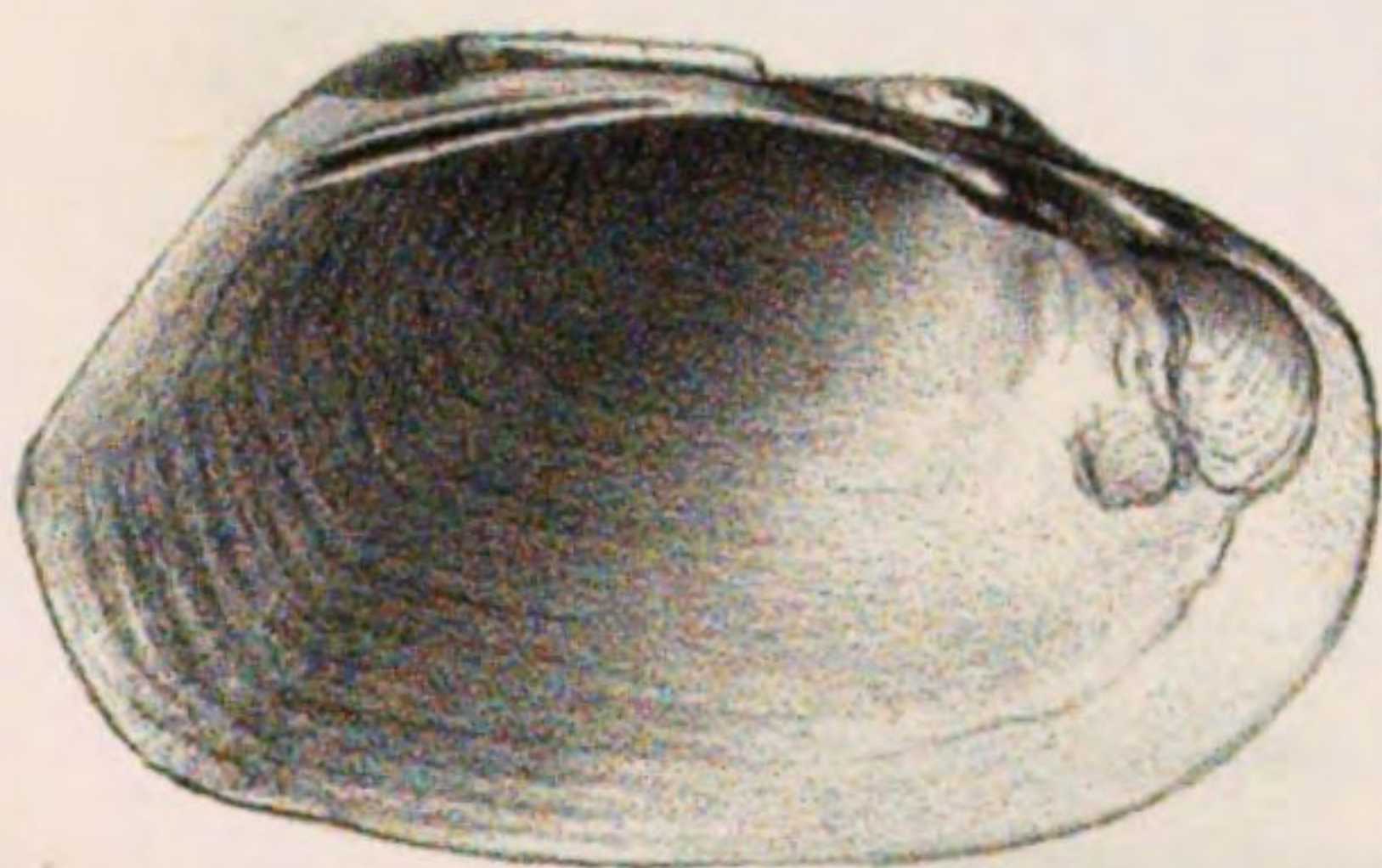
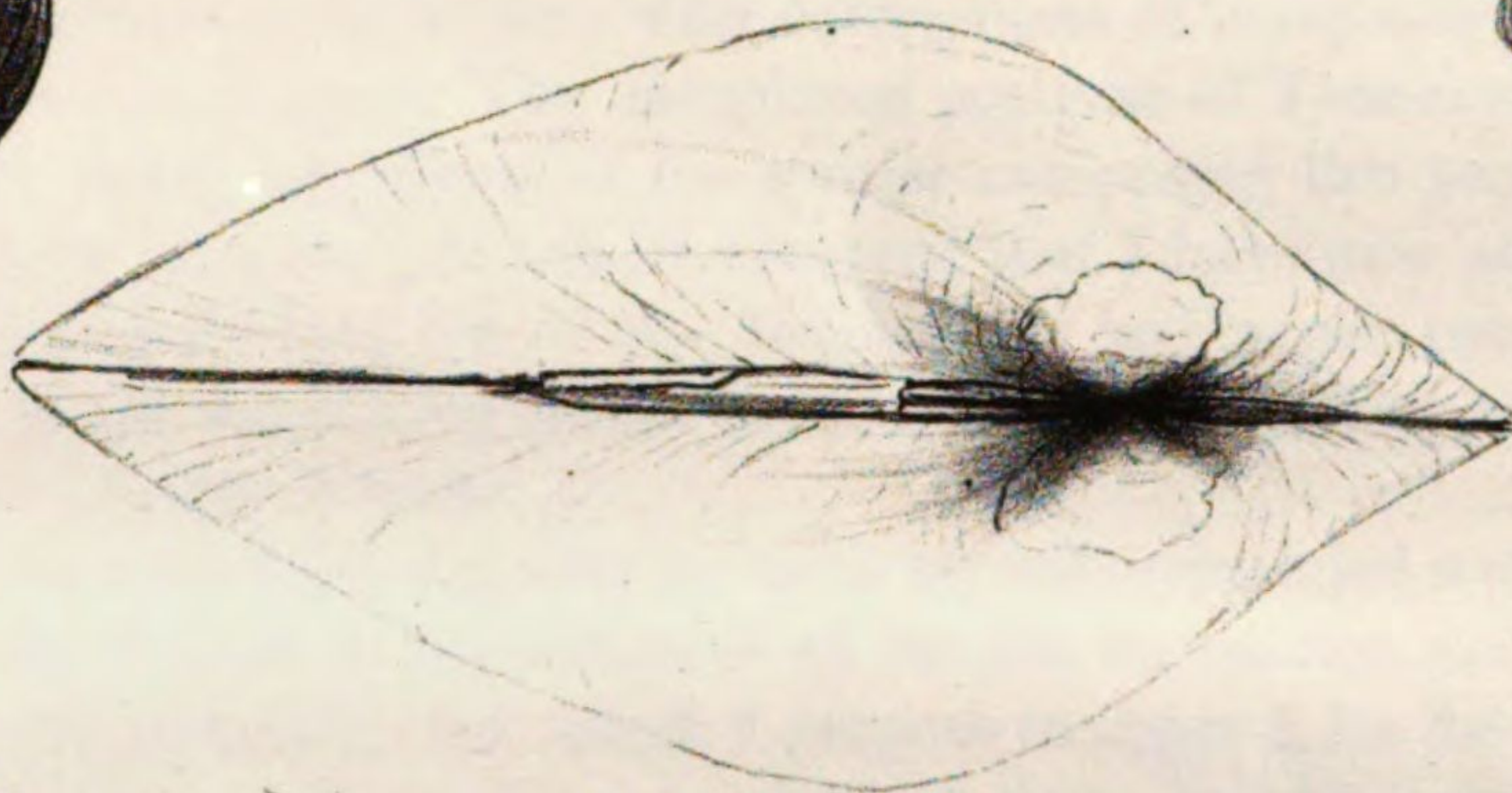
11.



10.



12.



10. *Unio neglectus*
11. *Unio superbus*
12. *Unio aratus*.

From Nature as Stated by French.

Am. Mus. Nat. Hist. Phila.

Description of New Fresh Water and Land Shells. By Isaac Lea. Read May 2d, 1845.

THE rich Fauna of our country, not yet completely explored, gives me the opportunity of again presenting myself before the Society with descriptions of many new organisms of an interesting nature to the zoologist. The unexplored portions of Tennessee, Alabama, and Louisiana contribute nearly the whole of the species composing this paper—some of them of more than ordinary interest. It will be observed that I have now added twenty-three new species to the already long list of the *Melaniæ*, my last paper containing fifty-seven. I also add six to the interesting genus *Schizostoma*—now making ten species in all—and twenty-six to the family *Naiades*.

In the investigation and necessary research to make myself acquainted with the genus *Melania*, I have necessarily looked up the names of all the known species, and for my own convenience have made an alphabetic list, which I propose to append, for the convenience of those who study this genus. The whole consists of three hundred and ninety-five names, by various authors, but I do not mean to be understood that these are all distinct species—a few are doubtless duplicated. Part of them are fossil.

Regarding my own species, it will be observed that, among some of them, there is a strong alliance; but I have abstained from considering them as typical where I could not find what I presumed to be a constant character. At the same time, I am perfectly aware of the extreme difficulty of separation, arising from the fact of the existence of the vast number of species now described as belonging to this genus, and their consequent inosculation. Where my mind was satisfied, however, after a close and careful examination, that their characteristics were persistent, I have put them down with confidence that they would, in the main, be found to be correct.

UNIO HIPPOPÆUS. Pl. I. Fig. 1.

Testâ plicatâ, ellipticâ, valdè inflatâ; valvulis subcrassis; natibus prominulis; epidermide luteo-fuscâ, striatâ; dentibus cardinalibus subgrandibus; lateralibus parvis curvisque; margaritâ albâ et iridescente.

Shell elliptical, folded, much inflated; valves rather thick; beaks rather prominent; epidermis yellowish-brown, striate; cardinal teeth rather large; lateral teeth small and curved; nacre white and iridescent.

Hab. Lake Erie—B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. 1.1,

Length 1.5,

Breadth 2.1 inches.

Shell elliptical, with a few folds on the middle of the disk, and much inflated; substance of the shell rather thick, thinner behind; beaks rather prominent; ligament short and thick; epidermis yellowish-brown and much striate; cardinal teeth rather larger, double in the left and disposed to be treble in the right valve; lateral teeth small, somewhat bladed and curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed on the under side of the cardinal tooth; cavity of the shell large and rounded; cavity of the beaks deep and angular; nacre white and iridescent.

Remarks.—This is a small, undulated species, most nearly allied to *U. plicatus*, Lesueur. A single one only is before me for examination, but Dr. Budd informs me that he received about twenty specimens, all bearing the same characters. Had a single specimen only been observed, I should have been disposed to consider it a stunted *plicatus*, with more inflation than usual, and with less development of the folds.

UNIO LATECOSTATUS. Pl. I. Fig. 2.

Testâ crebrè plicatâ, ellipticâ, compressâ; valvulis crassis; natibus prominulis; epidermide tenebroso-fuscâ, valdè striatâ; dentibus cardinalibus magnis; lateralibus longis subrectisque; margaritâ albâ et valdè iridescente.

Shell much folded, elliptical, compressed; valves thick; beaks slightly prominent; epidermis dark-brown, much striated; cardinal teeth large; lateral teeth long and nearly straight; nacre white and very iridescent.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

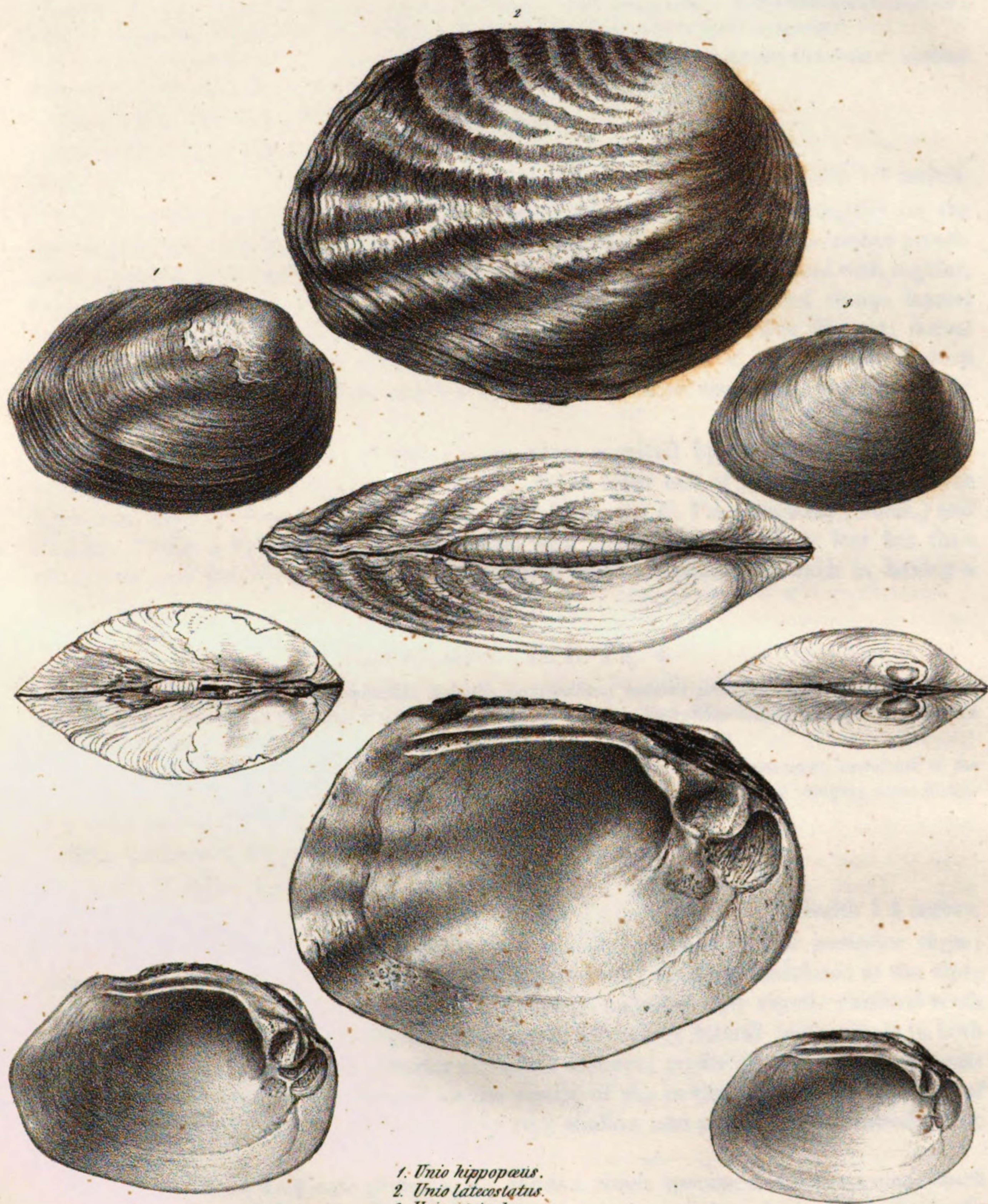
Diam. 1.3,

Length 2.5,

Breadth 3.5 inches.

Shell very much folded over the whole disk, with thick ribs, visible on the inside, remarkably oval, much compressed; substance of the shell thick before, thinner behind; beaks scarcely prominent; ligament long and rather thick; epidermis very dark-brown, nearly black and much striate; cardinal teeth very large and thick, double in the left and single in the right valve; lateral teeth long, rather thin, and nearly straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed on the under side of the cardinal tooth; cavity of the shell very shallow; cavity of the beaks shallow and somewhat angular; nacre white, tinged with purple on the posterior margin, and very iridescent.

Remarks.—But two specimens of this species were received by Dr. Budd, and my cabinet is indebted to him for one of them. The large, regular, and thick fold, and regular oval margin distinguish this shell from the proximate species. It is perhaps most closely allied to *U. undulatus*, Barnes, but may be distinguished at once by its oval form, and the number and regularity of its folds or ribs, which are remarkably parallel. The posterior portion of the valves being rather thin, causes the thick ribs to be impressed on the inside, which has a very unusual and brilliant iridescence, tinged with purple in the nacre. The cardinal teeth are very large in proportion to the lateral teeth.



1. *Unio hippopæus*.
2. *Unio latecostatus*.
3. *Unio utriculus*.

UNIO UTRICULUS. Pl. I. Fig. 3.

Testâ lævi, ellipticâ, inflatâ; valvulis subcrassis; natibus subprominentibus; epidermide tenebroso-fuscâ; dentibus cardinalibus parvis; lateralibus longis rectisque; margaritâ alba et valdè iridescente.

Shell smooth, elliptical, inflated; valves rather thick; beaks rather prominent; epidermis dark-brown; cardinal teeth small; lateral teeth long and straight; nacre white and very iridescent.

Hab. North Carolina. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. .8,

Length 1.1,

Breadth 1.7 inches.

Shell smooth, regularly elliptical, inflated, very inequilateral, obscurely angular on the umbonial slope; substance of the shell thick before and thin behind; beaks rather prominent; ligament short and thin; epidermis very dark-brown, without rays, and with regular, nearly equidistant lines of growth; cardinal teeth very small, erect, and sharp; lateral teeth long and straight; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed on the under side of the cardinal tooth; cavity of the shell rather deep and rounded; cavity of the beaks shallow and rounded; nacre very white and beautifully iridescent.

Remarks.—Two specimens of this species were received by Dr. Budd. They came with the others from North Carolina, and no doubt from one of the tributaries of the Tennessee river. This species has some resemblance to *U. Vanuxemensis*, (Nobis,) and *U. glans*, (Nobis,) but need not be confounded with either of them. It is less flat than the former, and not so much inflated as the latter, and is dissimilar to each in having a white nacre.

UNIO HYALINUS. Pl. II. Fig. 4.

Testâ lævi, obovatâ, subinflatâ, diaphanâ; valvulis pertenuibus; natibus prominulis, ad apices undulatis; epidermide tenebroso-fuscâ; dentibus cardinalibus parvis, compressis; lateralibus longis rectisque; margaritâ cæruleo-albâ et iridescente.

Shell smooth, obovate, subinflated, transparent; valves very thin; beaks slightly prominent, undulated at the tips; epidermis dark-brown; cardinal teeth small and compressed; lateral teeth long and straight; nacre bluish-white and iridescent.

Hab. Richmond, Virginia. Major Le Conte.

Cabinet of Major Le Conte.

Diam. .5,

Length .9,

Breadth 1.4 inches.

Shell smooth, obovate, rather inflated, transparent; carinate on the posterior slope; substance of the shell very thin; beaks slightly prominent, minutely undulated at the tips; ligament very short and thin; epidermis dark-brown and obscurely rayed; cardinal teeth single in the right valve and slightly cleft in the left valve; lateral teeth single in both valves, long and compressed; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed immediately on the centre of the cavity of the beaks; cavity of the shell rather shallow; cavity of the beaks very shallow and angular; nacre bluish-white and iridescent.

Remarks.—Major Le Conte placed in my hands a single specimen of this species, which he procured from Richmond. It is a distinct and peculiar species which cannot be easily

confounded with any other, except one from the Chatahoochee, for which I propose the name of *pellucidus*. It is more triangular than that shell, and differs in the peculiarity of the lateral teeth in both valves being single, while in that shell it is double in the right valve.

UNIO ATRO-COSTATUS. Pl. II. Fig. 5.

Testâ plicatâ, subquadratâ, inflatâ; valvulis crassis; natibus prominentibus; epidermide nigrâ, striatâ; dentibus cardinalibus magnis; lateralibus sublongis subrectisque; margaritâ albâ et iridescente.

Shell folded, somewhat quadrate, inflated; valves thick; beaks somewhat prominent; epidermis black and striate; cardinal teeth large; lateral teeth rather long and nearly straight; nacre white and iridescent.

Hab. Claiborne, Alabama—Judge Tait. Tuscaloosa, Alabama—B. W. Budd, M. D. Alexandria, Louisiana—Josiah Hale, M. D.

My cabinet and cabinets of Dr. Budd and Dr. Hale.

Diam. 1.6,

Length 2.5,

Breadth 3 inches.

Shell folded, somewhat quadrate, inflated; substance of the shell thick, thinner behind; beaks large, rounded, and rather prominent; ligament rather short and thick; epidermis black and striate; cardinal teeth very large, thick, and wide, double in the left and disposed to be treble in the right valve; lateral teeth rather long and nearly straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices on the under side of the plate near to the cardinal tooth; cavity of the shell rather deep and rounded; cavity of the beaks shallow and angular; nacre white and iridescent.

Remarks.—The late Judge Tait sent me several specimens of this species, many years ago, and subsequently I have received specimens from Drs. Hale and Budd, which have cleared up my previous doubts of its being distinct from its allied species *U. undulatus*, Barnes. It may be distinguished by the outline of *atro-costatus* being more rounded—scarcely taking a quadrate form—in having a more elevated umbo, and in being quite black, where the individual is mature—the young being usually a dark-green.

The specimens, six in number, sent to me by Dr. Budd, are all from Tuscaloosa, and are only slightly folded, the surface of the disk presenting small, irregular undulations, which give it a somewhat varicose or subnodose appearance. The largest of them is only two and a half inches wide, while the largest from Claiborne is nearly five inches wide. There is a slight purple tint on the posterior margin of those from Alexandria.

UNIO PELLUCIDUS. Pl. II. Fig. 6.

Testâ lævi, obovatâ, subcompressâ, pellucidâ; valvulis pertenuibus; natibus prominulis, ad apices undulatis; epidermide tenebroso-fuscâ; dentibus cardinalibus parvis, compressis erectisque; lateralibus longis, rectis lamellatisque; margaritâ cæruleo-albâ et iridescente.

Shell smooth, obovate, rather compressed, pellucid; valves very thin; beaks slightly prominent, undulated at the beaks; epidermis dark-brown; cardinal teeth small, compressed, and erect; lateral teeth long, straight and lamellar; nacre bluish-white and iridescent.

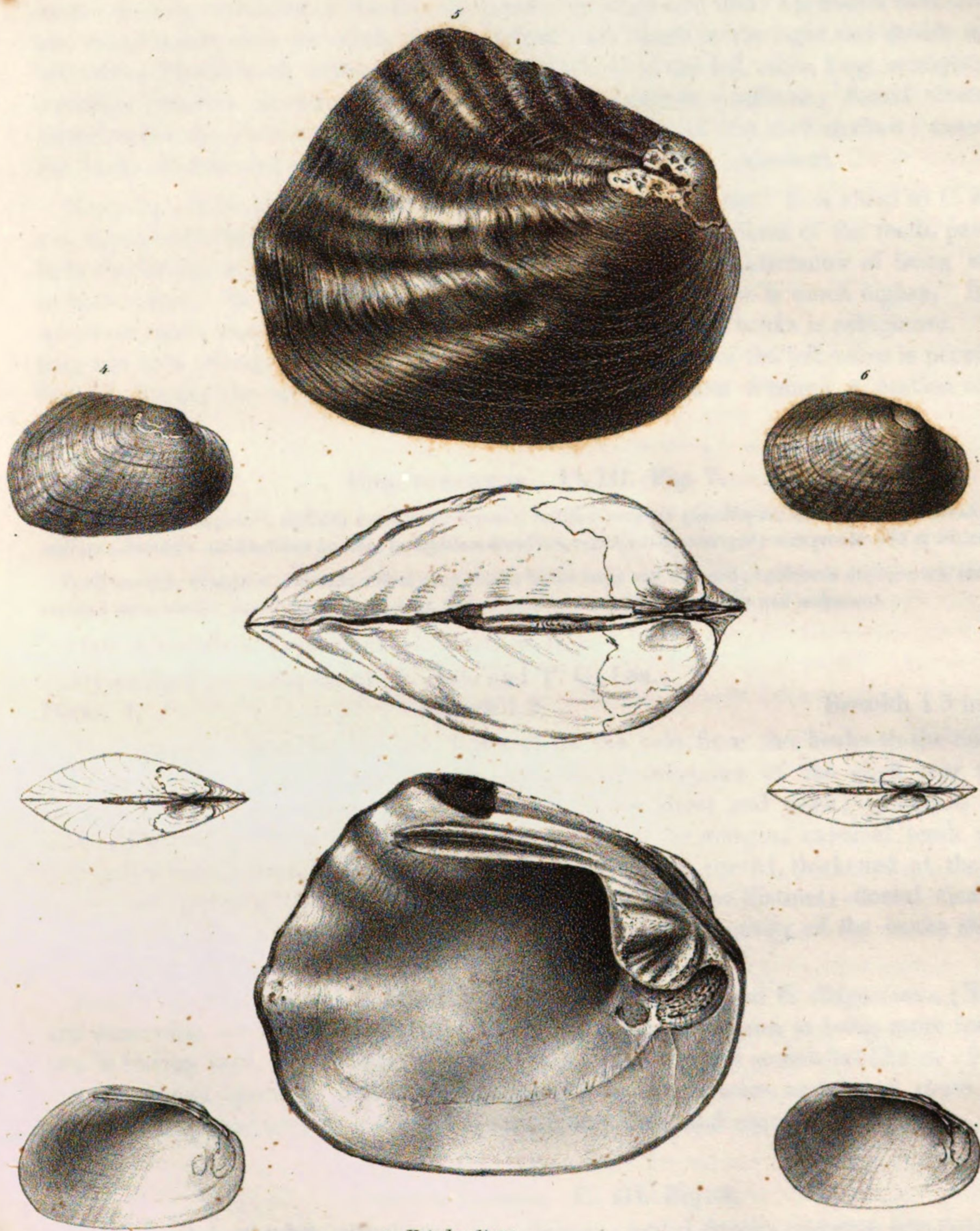
Hab. Chatahoochee river, Georgia. Major Le Conte.

Cabinet of Major Le Conte.

Diam. .5,

Length .8,

Breadth 1.3 inches.



4. *Unio hyalinus*.
5. *Unio atrocostatus*.
6. *Unio pellucidus*

Shell smooth, obovate, rather compressed, pellucid, very inequilateral, rounded and enlarged over the umbonal slope; substance of the shell very thin; beaks slightly prominent, minutely undulated at the tip; ligament very short and thin; epidermis dark-brown, and rayed nearly over the whole disk; cardinal teeth single in the right and double in the left valve; lateral teeth double in the right and single in the left valve, long, straight, and lamellar; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed under the plate near to the cardinal tooth; cavity of the shell shallow; cavity of the beaks shallow and rounded; nacre bluish-white and very iridescent.

Remarks.—A single specimen only of this species is before me. It is allied to *U. hyalinus*, described herein, but may be distinguished at once by the form of the teeth, particularly the lateral one, which, in that shell, has the remarkable character of being single in both valves. In the *hyalinus* the carina of the posterior slope is much higher. In the specimen under examination the space about the cavity of the beaks is rubiginose. This may not be a prominent characteristic. The cardinal tooth of the left valve is peculiarly formed, having the superior portion very small, and almost forming a portion of the dorsal line.

UNIO TUMESCENS. Pl. III. Fig. 7.

Testâ lævi, triangulari, inflatâ; valvulis percrassis, natibus magnis elevatisque; epidermide tenebroso-fuscâ, radiatâ; dentibus cardinalibus parvis; lateralibus brevibus, crassis subcurvisque; margaritâ albâ et iridescente.

Shell smooth, triangular, inflated; valves very thick; beaks large and elevated; epidermis dark-brown, radiated; cardinal teeth small; lateral teeth short, thick and somewhat curved; nacre white and iridescent.

Hab. Alexandria, Louisiana. J. Hale, M. D.

My cabinet and cabinets of Dr. Hale and T. G. Lea.

Diam. .1, Length 1.3, Breadth 1.5 inches.

Shell smooth, triangular, inflated, flattened on the side from the beaks to the margin, angular on the umbonal slope, nearly equilateral; substance of the shell very thick, thinner behind; beaks large and elevated; ligaments short and thick; epidermis dark-brown, finely striate, and with green rays reaching to the margin; cardinal teeth small, and rather erect; lateral teeth short, thick, and somewhat curved, thickened at the posterior end; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed under the cardinal tooth; cavity of the shell shallow, cavity of the beaks shallow and rounded; nacre white and iridescent.

Remarks.—This species is allied to *U. trigonus*, (Nobis,) and *U. Edgarianus*, (Nobis,) and somewhat resembles *U. obliquus*, Lam. It differs from *trigonus* in being more rounded and in having rays. It is fuller than *Edgarianus*, and is rayed somewhat like it. I have but one perfect specimen and a single odd valve of this species, and in all these three valves the superior posterior cicatrix is remarkably deep and round.

UNIO PERNODOSUS. Pl. III. Fig. 8.

Testâ pernodosâ, rotundatâ, subcompressâ; valvulis crassis; natibus elevatis; epidermide luteo-fuscâ; dentibus cardinalibus magnis; lateralibus brevibus, crassis subrectisque; margaritâ albâ.

Shell very nodulous, rounded, rather compressed; valves thick; beaks elevated; epidermis yellowish-brown; cardinal teeth large; lateral teeth short, thick and nearly straight; nacre white.

Hab. North Carolina. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. 1.4, Length 2.2, Breadth 2.4 inches.

Shell tuberculate nearly all over, rounded, rather compressed on the sides and towards the margin; substance of the shell thick, thinner behind; beaks elevated; ligament rather short and thick; epidermis yellowish-brown, striate, and crimped; posterior slope impressed and thickly tuberculate; anterior slope nearly free from tubercles; cardinal teeth large, wide, and double in both valves; lateral teeth short, thick, and nearly straight; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed on the under side of the cardinal tooth; cavity of the shell shallow; cavity of the beaks rather deep and angular; nacre white.

Remarks.—Three specimens of this species were sent to me by Dr. Budd, labelled "North Carolina." They are evidently from that portion of the state which is drained by the tributaries of the river Tennessee, and were accompanied by species common to the Holston, &c. In this we have another species which must be placed in the group which Mr. Barnes' *verrucosus* must be considered to form the type. It certainly is more nearly allied to that species than any other. It differs, however, from it in having a white nacre, instead of a chocolate-coloured one—in having smaller and more frequent tubercles, and in being more rounded in the outline. It differs from *Cooperianus*, (Nobis,) in the tubercles being smaller, more frequent, and in being more compressed. In the three specimens before me there is no indication of flesh colour, which usually is found in the *Cooperianus*. There is no indication of any rays on these specimens, and the beaks of all of them being eroded, they do not present the opportunity of observing their normal undulations.

UNIO FLAVESCENS. Pl. III. Fig. 9.

Testa lævi, ellipticâ, subinflatâ; valvulis subtenuibus; natibus subprominentibus; epidermide luteo-corneâ, striatâ; dentibus cardinalibus parvis; lateralibus sublongis, subrectisque; margaritâ albâ et iridescente.

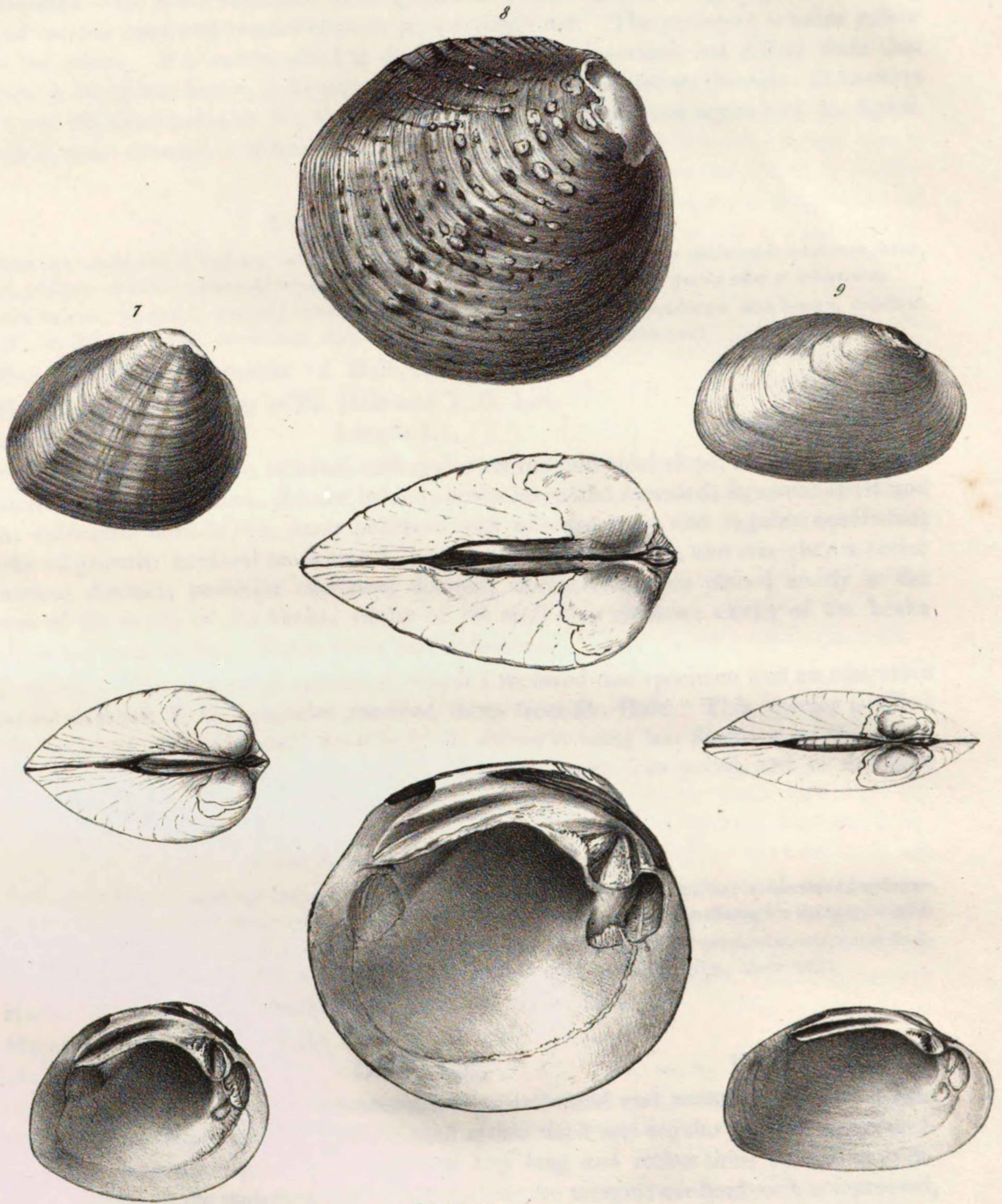
Shell smooth, elliptical, somewhat inflated; valves rather thin; beaks somewhat prominent; epidermis yellowish horn colour, striate; cardinal teeth small; lateral teeth rather long and nearly straight; nacre white and iridescent.

Hab. Black Warrior river, Alabama. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. .7, Length 1.1, Breadth 1.7 inches.

Shell smooth, elliptical, somewhat inflated, inequilateral, obscurely angular on the umbonial slope, and flattened on the side; substance of the shell rather thick, thinner behind; beaks rather prominent; ligament rather short and thin; epidermis yellowish horn colour, striate, shining, and without rays; cardinal teeth very small, single in the right and double in the left valve; lateral teeth rather long and nearly straight, thickened at the posterior end; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed nearly in the centre of the cavity of the beaks; cavity of the shell rather shallow and rounded; cavity of the beaks shallow and rounded; nacre white and iridescent.



7. *Unio tumescens*.
 8. *Unio pernodosus*
 9. *Unio flavescens*.

From Nature on Stone by French

Sinclair's Lith. Phila.

Remarks.—Dr. Budd submitted three specimens of this species to my inspection. They are of various ages, and neither of them have a single ray. The youngest is more yellow than the others. It is nearly allied to *U. simplex*, herein described, but differs from that species in being less heavy, in having no rays, and in being flatter on the side. It answers nearly to the description of Mr. Conrad's *U. Greenii*, but does not agree with his figure, which is more rounded, and has rays.

UNIO FULGIDUS. Pl. IV. Fig. 10.

Testá lævi, triangulari, inflatâ; valvulis crassis; natibus magnis elevatisque; epidermide tenebroso-fuscâ, politâ, radiatâ; dentibus cardinalibus parvis; lateralibus crassis rectisque; margaritâ albâ et iridescente.

Shell smooth, triangular, inflated; valves thick; beaks large and elevated; epidermis dark-brown, polished, rayed; cardinal teeth small; lateral teeth thick and straight; nacre white and iridescent.

Hab. Alexandria, Louisiana. J. Hale, M. D.

My cabinet and cabinets of Dr. Hale and T. G. Lea.

Diam. .8,

Length 1.1,

Breadth 1.2 inches.

Shell smooth, triangular, inflated, subangular on the umbonal slope, nearly equilateral; substance of the shell thick, thinner behind; beaks large and elevated; ligament short and thin; epidermis dark-brown, finely polished, with obscure rays, and regular, equidistant marks of growth; cardinal teeth small, lateral teeth short, thick, and straight; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed nearly in the centre of the cavity of the beaks; cavity of the shell very shallow; cavity of the beaks shallow and subangular. Nacre white and iridescent.

Remarks.—This is a small species of which I received one specimen and an odd valve from my brother, T. G. Lea, who received them from Dr. Hale. This species is allied to *U. tumescens*, (Nobis,) herein described. It differs in being less flattened on the sides, in not having an angular umbonal slope, in having a more fine polish, and in the rays being more obscure.

UNIO SYMMETRICUS. Pl. IV. Fig. 11.

Testâ lævi, oblongâ, subcompressâ; valvulis subcrassis; natibus subprominentibus; epidermide tenebroso-fuscâ; dentibus cardinalibus compressis, elevatis, acuminatis; lateralibus longis, lamellatisque; margaritâ albâ.

Shell smooth, oblong, rather compressed; valves somewhat thick; beaks somewhat prominent; epidermis dark-brown; cardinal teeth compressed, elevated, and pointed; lateral teeth long and lamellar; nacre white.

Hab. Red River, at Alexandria, Louisiana. J. Hale, M. D.

My cabinet and cabinet of Dr. Hale.

Diam. 1.1,

Length 1.8,

Breadth 3.2 inches.

Shell smooth, oblong, rather compressed, angular behind and rounded before, carinate on the posterior slope; substance of the shell rather thick and regular on the interior surface; beaks somewhat prominent; ligament very long and rather thin; epidermis dark-brown, polished on the umbones, and wrinkled along the margin; cardinal teeth compressed, elevated, pointed, single in the right and double in the left valve; lateral teeth long, lamellar, thickened in the left valve and slightly recurved; anterior cicatrices distinct;

posterior cicatrices confluent; dorsal cicatrices numerous, deep, and placed in the centre of the cavity of the beaks; cavity of the shell rather shallow; cavity of the beaks shallow and angular; nacre white.

Remarks.—Three specimens of this species have been recently sent to me by Dr. Hale. It belongs to the group of which Mr. Say's *camptodon* may be considered as the type, and which includes his *declivis* and *tetralasmus*—if the latter be a true species, of which I am unable to decide, never having seen a specimen of it. In all the three specimens before me the outline is remarkably regular and uniform, and very closely resembles the *declivis*, but the angle is less acute. In the three there is no appearance of rays—one of them is inclined to yellow. The margin of the interior surface is rather broad and dark. The two impressed lines, from the beak to the posterior margin which exist in so many species, are rather more marked than usual. A specimen in Dr. Griffith's cabinet, supposed to be Mr. Conrad's *U. excultus*, approaches very closely to this species, and it may prove, when more perfect individuals are found and compared, to be only a variety.

UNIO UNICOLOR. Pl. IV. Fig. 12.

Testa lævi, subrotundâ, subcompressâ; valvulis crassis; natibus subprominentibus; epidermide fuscâ; dentibus cardinalibus parvis; lateralibus longis subrectisque; margaritâ albâ et iridescente.

Shell smooth, nearly round, rather compressed; valves thick; beaks slightly prominent; epidermis brown; cardinal teeth small; lateral teeth long and nearly straight; nacre white and iridescent.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

Cabinet of Dr. Budd.

Diam. .5, Length .8, Breadth 1.1 inches.

Shell smooth, nearly round, rather compressed and somewhat lenticular; substance of the shell thick, thinner behind; beaks but slightly prominent; ligament short and thin; epidermis rather dark-brown, with very fine, shining striæ; cardinal teeth small, single in the right and double in the left valve; lateral teeth long and nearly straight; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices on the under side of the plate near the cardinal tooth; cavity of the shell rather shallow and regularly rounded; cavity of the beaks small and slightly angular; nacre very white and iridescent.

Remarks.—This is a very small species, with characteristics more nearly resembling *U. lens*, (Nobis,) than any other with which I am acquainted. One specimen only was sent to me by Dr. Budd.

UNIO APPROXIMUS. Pl. V. Fig. 13.

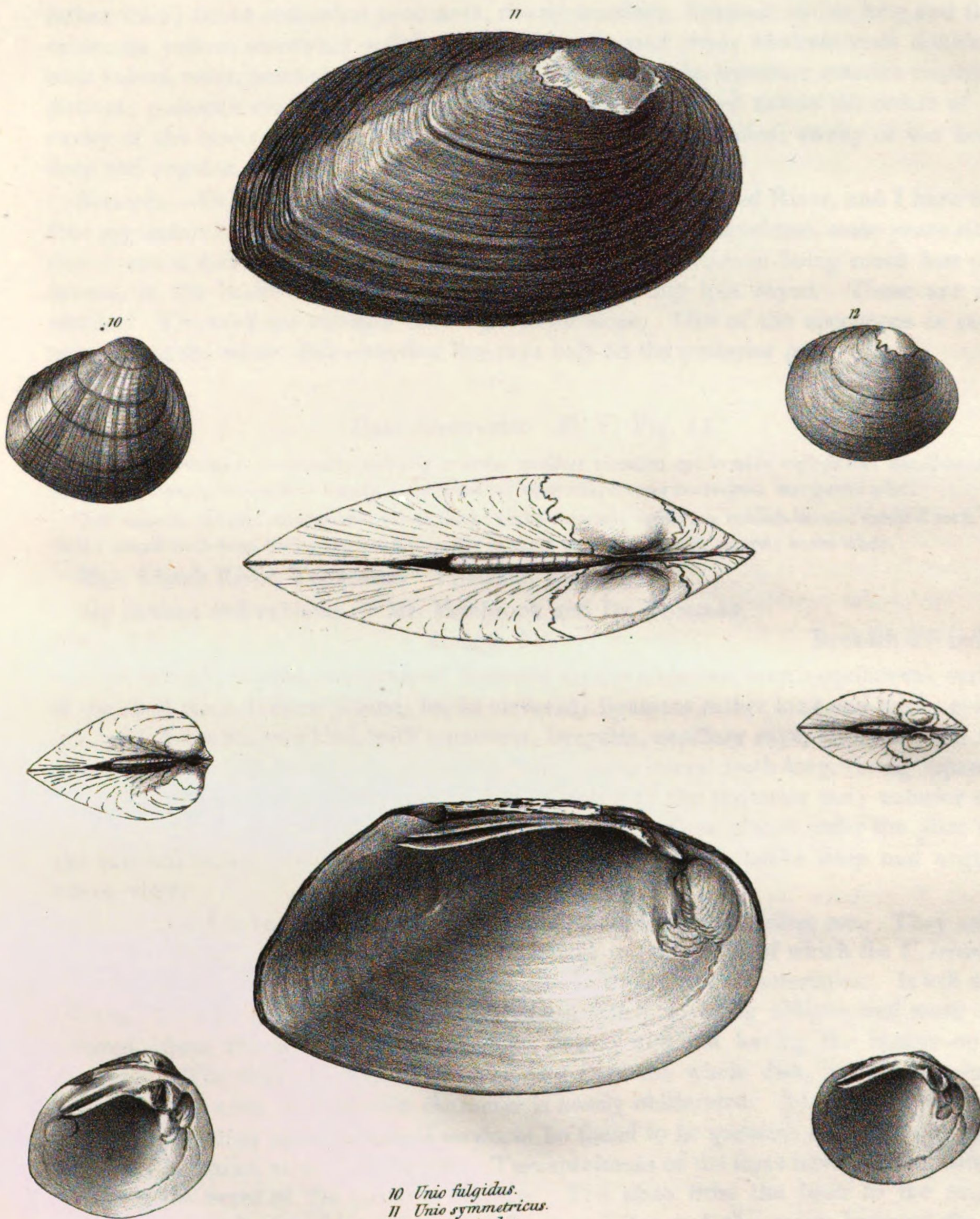
Testa lævi, ellipticâ, inflatâ; valvulis subcrassis; natibus prominulis; epidermide luteâ, radiatâ; dentibus cardinalibus parvis, acuminatis; lateralibus longis, subrectisque; margaritâ albâ et iridescente.

Shell smooth, elliptical, inflated; valves rather thick; beaks somewhat prominent; epidermis yellow, radiated; cardinal teeth small, pointed; lateral teeth long and nearly straight; nacre white and iridescent.

Hab. Red River, at Alexandria, Louisiana. J. Hale, M. D.

My cabinet and cabinet of Dr. Hale.

Diam. .1, Length 1.3, Breadth 2.2 inches.



10 *Unio fulgidus*.
11 *Unio symmetricus*.
12 *Unio unicolor*.

Shell smooth, elliptical, inflated, rounded before and behind; substance of the shell rather thick; beaks somewhat prominent, nearly terminal; ligament rather long and thin; epidermis yellow, somewhat polished, smooth, with small rays; cardinal teeth double in both valves, erect, pointed; lateral teeth long, nearly straight, lamellar; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed across the centre of the cavity of the beaks; cavity of the shell rather deep and rounded; cavity of the beaks deep and angular.

Remarks.—Dr. Hale has twice sent me this shell, from the Red River, and I have now four specimens before me. I thought when I first received a specimen, some years since, that it was a variety of *Hydiana*, but it differs from that species in being much less ponderous, in the beaks being more terminal, and in being less rayed. These are also smaller. The rays are stronger on the posterior slope. One of the specimens is rayed nearly over the whole disk—another has rays only on the posterior part.

UNIO CAPERATUS. Pl. V. Fig. 14.

Testâ lævi, obliquâ, compressâ; valvulis crassis; natibus elevatis; epidermide rufo-fuscâ; dentibus cardinalibus percrassis; lateralibus longis, à cardinalibus separatis, crassis curvisque; margaritâ albâ.

Shell smooth, oblique, compressed; valves thick; beaks elevated; epidermis reddish-brown; cardinal teeth very thick; lateral teeth long, (being separated from the cardinal teeth,) thick, and curved; nacre white.

Hab. Clinch River, Tennessee. President Estabrook.

My cabinet and cabinets of Mr. Estabrook and Dr. Foreman.

Diam. 1.2,

Length 1.9,

Breadth 2.5 inches

Shell smooth, oblique, compressed, flattened on the umbones, very inequilateral, surface of the shell thick, thinner behind; beaks elevated; ligament rather long and thick; epidermis reddish-brown, wrinkled, with numerous, irregular, capillary rays; cardinal teeth very thick, large, and disposed to be double in both valves; lateral teeth long, (being separated from the cardinal teeth,) thick, curved, and enlarged at the posterior end; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed under the plate near the cardinal tooth; cavity of the shell shallow; cavity of the beaks deep and angular; nacre white.

Remarks.—I have three specimens of this interesting species before me. They are all mature shells, and a good deal eroded. It belongs to that group of which the *U. irroratus*, (Nobis,) may be considered the type, having the correlative characteristics. It will stand between *irroratus* and *dromas*. From the first it differs in being oblique, and more compressed—from the latter in being smaller, flatter, and not having the humps on the umbones. The capillary rays seem to spread over the whole disk, but the specimens being old and worn, that notable character is nearly obliterated. The colour of the epidermis, in younger specimens, will no doubt be found to be greenish and yellow, and the rays very beautiful, as in the *irroratus*. Two specimens of the three have a tint of salmon-colour in the nacre of the posterior portion. The plate from the beak to the margin, between the cardinal and lateral teeth, is large and flat, and the space between the two teeth very much arched. It is very evident, from the lines of growth, that the young are nearly round, the disk becoming protruded and patulous, when old.

UNIO SIMPLEX. Pl. V. Fig. 15.

Testa lævi, ellipticâ, subinflatâ; valvulis subcrassis; natibus subprominentibus; epidermide lutcâ; dentibus cardinalibus parvis; lateralibus longis, crassis subrectisque; margaritâ albâ et iridescente.

Shell smooth, elliptical, somewhat inflated; valves rather thick; beaks somewhat prominent; epidermis yellow; cardinal teeth small; lateral teeth long, thick, and nearly straight; nacre white and iridescent.

Hab Black Warrior River, Alabama. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. .7, Length .1, Breadth 1.6 inches.

Shell smooth, elliptical, somewhat inflated, rounded and full on the umbonial slope; substance of the shell rather thick, thinner behind; beaks rather prominent; ligament long and narrow; epidermis yellow, shining, and finely striate, with a few capillary rays on the posterior slope; cardinal teeth very small, single in the right and double in the left valve, crenate; lateral teeth long, thick at the posterior end, and nearly straight; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed on the under side of the cardinal tooth; cavity of the shell rather deep; cavity of the beaks rather shallow and rounded; nacre very white and iridescent.

Remarks.—Two specimens of this species were placed under my notice, by Dr. Budd. It has somewhat the aspect of *U. Hydianus*, (Nobis,) but differs in being less transverse and having a more striate surface, and being without the numerous beautiful rays which so generally prevail in that species. Both the specimens before me have the same capillary rays on the posterior slope, and none whatever on the other portions of the disk. The lateral tooth is remarkable for the thickness on the inferior side of the posterior end.

UNIO GOULDII. Pl. VI. Fig. 16.

Testa lævi, ellipticâ, subinflatâ, inequilaterali; valvulis subcrassis; natibus prominulis; epidermide tenebrososâ; dentibus cardinalibus parvis, subcrassis; lateralibus longis curvisque; margaritâ subaureâ et valdè iridescente.

Shell smooth, elliptical, somewhat inflated, inequilateral; valves rather thick; beaks slightly prominent; epidermis dark-brown; cardinal teeth small and thick; lateral teeth long and curved; nacre somewhat golden and very iridescent.

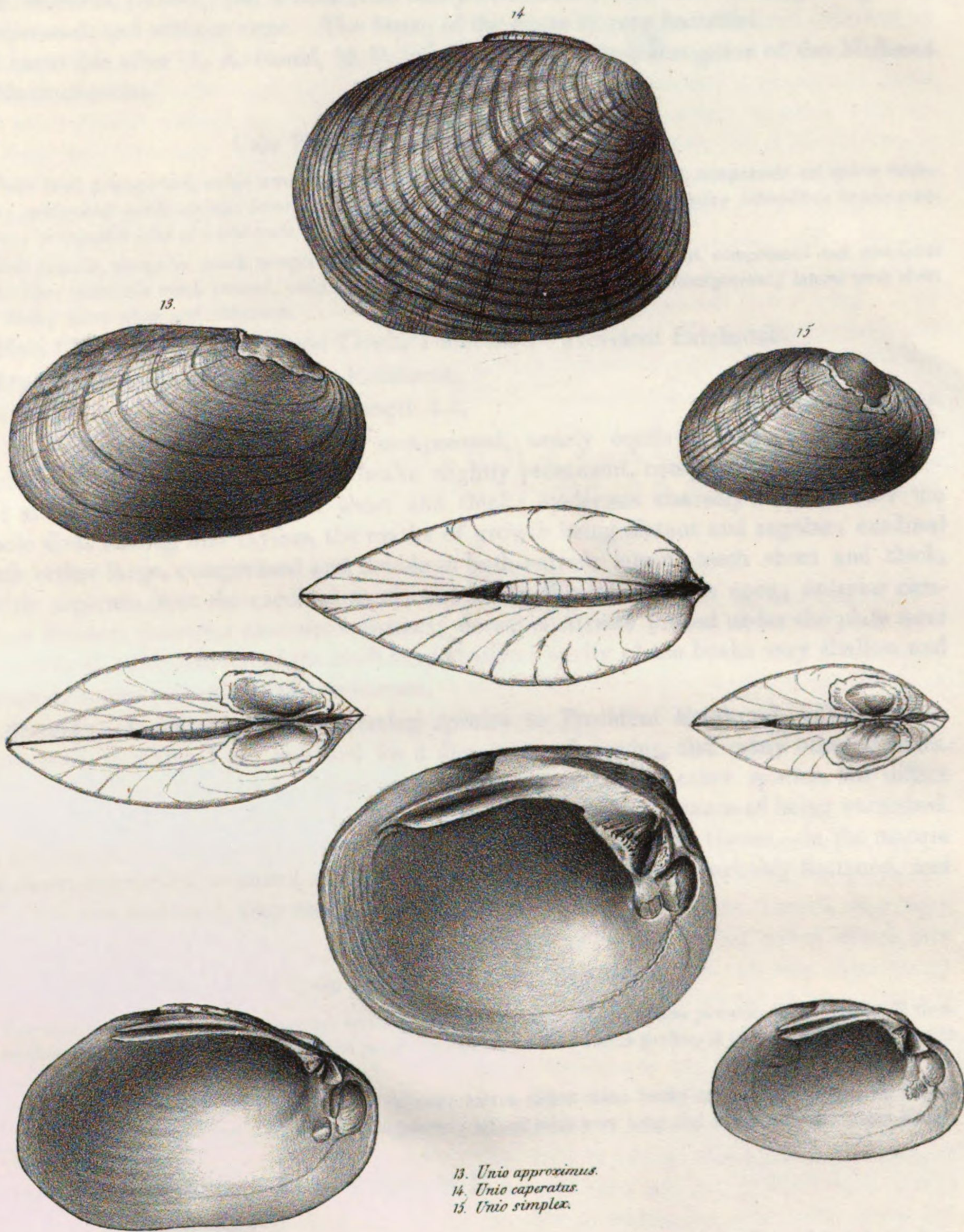
Hab. Tuscaloosa, Alabama. R. E. Griffith, M. D.

Cabinet of R. E. Griffith, M. D.

Diam. .7, Length 1.1, Breadth 1.9 inches.

Shell smooth, elliptical, somewhat inflated, inequilateral, rounded before and obtusely angular behind; substance of the shell rather thick, thinner before; beaks slightly prominent; epidermis dark-brown, without rays; cardinal teeth small and thick, double in both valves; lateral teeth long, curved in the left valve, the superior one considerably shorter than the inferior one; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed on the plate under the cardinal teeth; cavity of the shell rather shallow; cavity of the beak rather shallow and angular; nacre very soft, satin like, somewhat golden, and very iridescent.

Remarks.—A single specimen of this shell only is before me. My attention was called to it by Dr. Griffith. The beaks are so much worn as to prevent this character from



13. *Unio approximatus.*
 14. *Unio caperatus.*
 15. *Unio simplex.*

From Nature on Stone by French

Sindair, Lith. Phila.

being obscured, and the whole epidermis is in a bad state. In form it is somewhat allied to *U. obscurus*, (Nobis,) but it cannot be easily confounded with that species, being more compressed, and without rays. The lustre of the nacre is very beautiful.

I name this after A. A. Gould, M. D., of Boston, the able investigator of the Mollusca of Massachusetts.

UNIO ESTABROOKIANUS. Pl. VI. Fig. 17.

Testâ lævi, triangulari, valdè compressâ; valvulis crassis; natibus prominulis, compressis, ad apices undulatis; epidermide valdè striatâ, luteo-fuscâ, nitidâ; dentibus cardinalibus compressis; lateralibus brevis crassisque; margaritâ albâ et iridescente.

Shell smooth, triangular, much compressed; valves thick; beaks slightly prominent, compressed and undulated at the tips; epidermis much striated, yellowish-brown and shining; cardinal teeth compressed; lateral teeth short and thick; nacre white and iridescent.

Hab. Clinch River and Second Creek, Tennessee. President Estabrook.

My cabinet and cabinet of Mr. Estabrook.

Diam. .1,

Length 2.2,

Breadth 3.1 inches.

Shell smooth, triangular, much compressed, nearly equilateral; substance of the shell thick before, thinner behind; beaks slightly prominent, compressed, minutely undulate at the tips; ligament rather short and thick; epidermis coarsely striated over the whole disk, shining and rayless, the marks of growth being distant and regular; cardinal teeth rather large, compressed and double in both valves; lateral teeth short and thick, widely separate from the cardinal tooth, and in the direction of the apex; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed under the plate near the cardinal tooth; cavity of the shell very shallow; cavity of the beaks very shallow and rounded; nacre very white and iridescent.

Remarks.—I dedicate this interesting species to President Estabrook, of Knoxville, Tennessee, to whom I am indebted for a fine suite of species, and many other favours. It is more nearly allied to *U. rubiginosus*, (Nobis,) than to any other species, but differs in the coarse striæ and peculiar surface, which gives it the appearance of being varnished. In the young, the epidermis has the yellow colour of *U. Æsopus*, Green,—in the mature specimen it acquires almost a reddish-brown. The sides are remarkably flattened, and the posterior margin is disposed to be biangular.

UNIO BINNEYI. Pl. VI. Fig. 18.

Testâ lævi, ellipticâ, valdè compressâ, striatâ; valvulis subtenuibus; natibus prominulis; epidermide tenebroso-fuscâ, nitidâ; dentibus cardinalibus parvis, compressis; lateralibus perlongis subcurvisque; margaritâ cæruleo-albâ et iridescente.

Shell smooth, elliptical, much compressed, striated; valves rather thin; beaks slightly prominent; epidermis dark-brown, shining; cardinal teeth small, compressed; lateral teeth very long and rather curved; nacre bluish-white and iridescent.

Hab. Southern States. R. E. Griffith, M.D.

Cabinet of Dr. Griffith.

Diam. .6,

Length 1.2,

Breadth 2.1 inches.

Shell smooth, elliptical, much compressed, striated, very inequilateral, rounded before and subbiangular behind, flattened anteriorly to the umbonial slope; substance of the shell rather thin; beaks slightly prominent; ligament rather short and very thin; epidermis dark-brown—almost black, without rays, shining, with distinct marks of growth; cardinal teeth small, compressed, double in both valves; lateral teeth very long, thin, lamellar and rather curved; anterior cicatrices confluent, posterior cicatrices confluent; dorsal cicatrices placed nearly in the centre of the cavity of the beaks; cavity of the shell very shallow; cavity of the beaks very shallow; nacre bluish-white and iridescent.

Remarks.—Dr. Griffith called my attention to a single specimen of this shell in his cabinet. The locality is uncertain, except that it is from some one of the southern states—he thinks Alabama. In general form it resembles a very short, compressed *nasutus*, Say. Like it it is flattened posteriorly, but it differs in its epidermis, and in the form of the cardinal teeth. The umbonial slope is slightly biangular. It has somewhat the aspect of *U. multistriatus*, (Nobis,) but it is a thinner shell. The beaks being eroded, the characters could not be ascertained—but they have the aspect of some of the species from South America.

I name this after Amos Binney, M. D., of Boston, a gentleman who has devoted much time to the development of our terrestrial Mollusca.

UNIO FULIGINOSUS. Pl. VII. Fig. 19.

Testa lævi, transversa, subcompressa; valvulis subcrassis; natibus prominulis; epidermide tenebroso-fusca; dentibus cardinalibus parvis; lateralibus longis curvisque; margarita vel albâ vel purpureâ.

Shell smooth, transverse, rather compressed; valves rather thick; beaks slightly prominent; epidermis dark-brown; cardinal teeth small; lateral teeth long and curved; nacre white or purple.

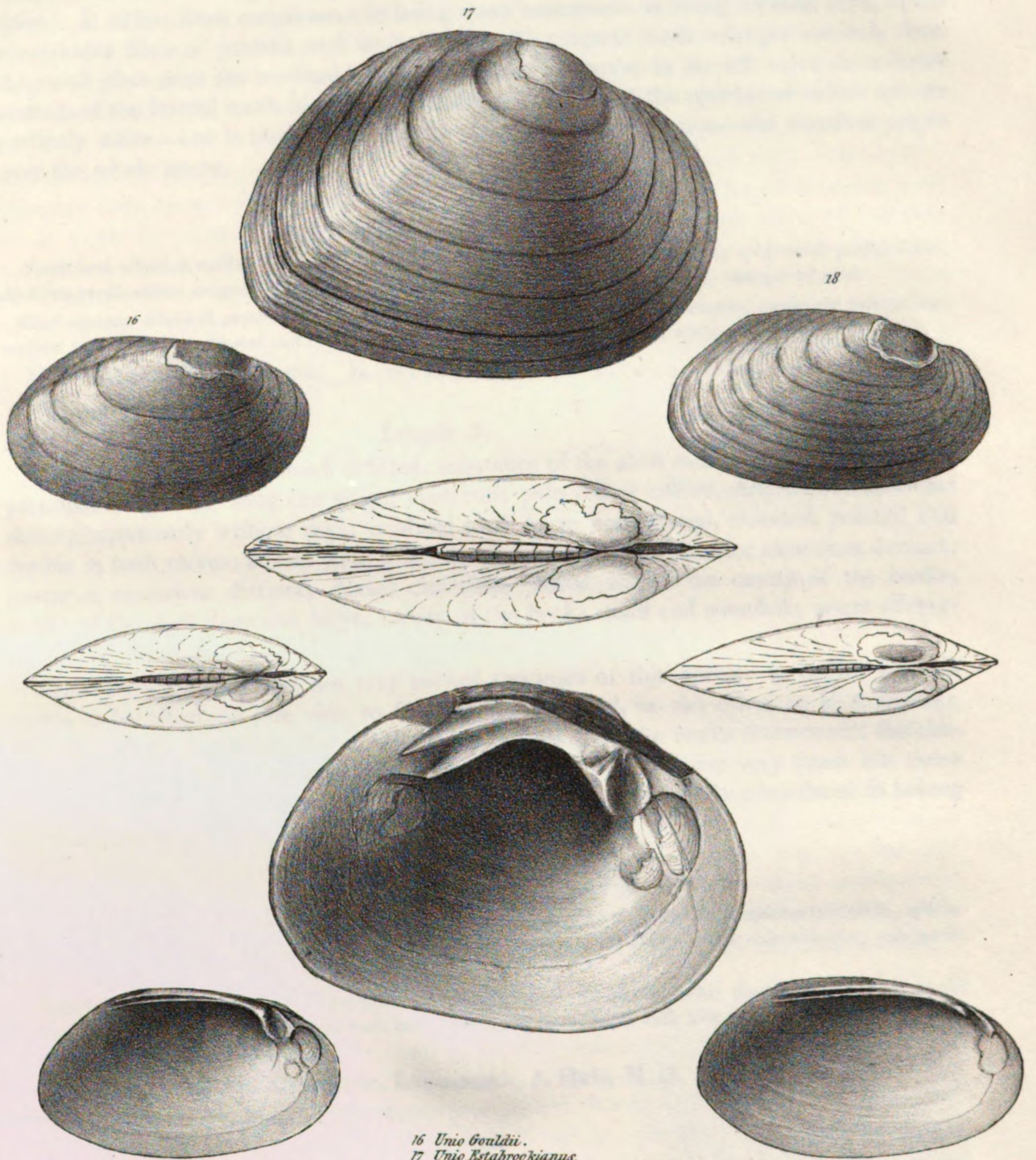
Hab. Cobb's Creek, near Philadelphia. R. E. Griffith, M. D.

My cabinet and cabinet of Dr. Griffith.

Diam. .7, Length 1.1, Breadth 2.2 inches.

Shell smooth, transverse, rather compressed, subangular behind, carinate on the posterior dorsal margin; substance of the shell rather thick; beaks slightly prominent; ligament rather long and thin; epidermis dark-brown, smooth, somewhat polished, without rays, with distant distinct lines of growth; cardinal teeth small, pointed, single in the right and double in the left valve; lateral teeth long, curved upward, and thickened at the posterior end; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed nearly in the centre of the cavity of the beaks; cavity of the shell rather shallow and rounded; cavity of the beaks shallow and somewhat angular; nacre white or purple.

Remarks.—It must be considered as quite a remarkable circumstance that a new species of *Unio* should have remained unobserved in the vicinity of Philadelphia, where so many zoologists have been, within the last thirty years, employed in researches. The first individual captured by Dr. Griffith was obtained about six months since, in Cobb's Creek, near La Grange, the country seat of Manuel Eyre, Esq. Subsequently Dr. Griffith found three more specimens, of different ages. All these are before me, and certainly present characters distinct from any species known to that accurate and experienced



16 *Unio Gouldii*.
 17 *Unio Estabrookianus*.
 18 *Unio Binneyi*.

naturalist, Dr. Griffith, or myself. By an inexperienced eye it might be considered as an aberrant form of *U. complanatus*, but in outline it is really more like *Margaritana margaritifera*. It differs from *complanatus* in being more transverse, in being without rays, in the remarkable lines of growth, and in its teeth. The lateral tooth enlarges suddenly from the small plate near the cardinal tooth and curves upwards; in the left valve the inferior portion of the lateral tooth is very much thickened. Two of the specimens before me are perfectly white—one is tinged with purple on the posterior portion—the fourth is purple over the whole nacre.

UNIO PALLESCENS. Pl. VII. Fig. 20.

Testâ lævi, ellipticâ, valdè inflatâ; valvulis subcrassis; natibus subprominentibus; epidermide pallido-luteâ; dentibus cardinalibus magnis, compressis erectisque; lateralibus longis curvisque; margaritâ albâ.

Shell smooth, elliptical, much inflated; valves rather thick; beaks slightly prominent; epidermis pale-yellow; cardinal teeth large, compressed and erect; lateral teeth long and curved; nacre white.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

Cabinet of Dr. Budd.

Diam. 1.4,

Length .2,

Breadth 3.1 inches.

Shell smooth, elliptical, much inflated: substance of the shell rather thick; beaks slightly prominent; ligament long and large; epidermis pale-yellow colour, striate and somewhat shining, apparently without rays; cardinal teeth large, compressed, elevated, pointed and double in both valves; lateral teeth long, lamellar, and curved; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed across the cavity of the beaks; cavity of the shell deep and large; cavity of the beaks small and rounded; nacre silvery-white and iridescent.

Remarks.—A single and not very perfect specimen of this species is before me. It seems to be allied, on one side, to *U. luteolus*, Lam., and, on the other, to *U. stramineus*, Conrad. A large portion of the disks being eroded from the beaks downwards, the characters of the younger growths cannot be observed. Its teeth are very much like those of *luteolus*, but I do not think this specimen could, with propriety be considered to belong to that species.

UNIO CALIGINOSUS. Pl. VII. Fig. 21.

Testâ lævi, ellipticâ, subcompressâ; valvulis subtenuibus; natibus prominulis, ad apicem undulatis; epidermide tenebroso-fuscâ; dentibus cardinalibus compressis, elevatis; lateralibus longis subcurvisque; margaritâ albâ et iridescente.

Shell smooth, elliptical, rather compressed; valves rather thin; beaks somewhat prominent, undulated at the beaks; epidermis dark-brown; cardinal teeth compressed, elevated; lateral teeth long and somewhat curved; nacre white and iridescent.

Hab. Red River, at Alexandria, Louisiana. J. Hale, M. D.

My cabinet and cabinet of Dr. Hale.

Diam. .8,

Length 1.2,

Breadth 2.2 inches.

Shell smooth, elliptical, rather compressed, obtusely angular behind; substance of the shell rather thin, slightly thickened before; beaks somewhat prominent and minutely un-

dulated at the tip; ligament rather long and thin; epidermis very dark-brown, somewhat wrinkled, and scarcely showing the lines of growth; cardinal teeth compressed, single in the right and double in the left valve, elevated, slightly crenulate, the anterior being the most elevated; lateral teeth long and somewhat curved; anterior cicatrix distinct; posterior cicatrix confluent; dorsal cicatrices placed in the centre of the cavity of the beaks; cavity of the shell rather shallow; cavity of the beaks shallow and angular; nacre white and iridescent.

Remarks.—Five female and three male adults, with two young shells of this species were received from Dr. Hale, at different times. The females are a good deal enlarged over the posterior slope, and spread out on the posterior basal margin. It seems to be nearly allied to *Nashvillianus*, Nobis, and to *Haleianus*, Nobis. It is not so large or pearly a nacre as the latter, nor does it seem to grow quite so large as the former. In the beaks it also differs from it. In some of the old specimens indistinct rays may be observed through the very dark surface. In the two young shells rays may be observed on the whole disk. The undulations of the beaks are small and very closely set.

UNIO SPATULATUS. Pl. VIII. Fig. 22.

Testâ lævi, ellipticâ, compressâ; valvulis subtenuibus; natibus vix prominulis, ad apicem undulatis; epidermide luteâ, valdè radiatâ; dentibus cardinalibus parvis; lateralibus longis rectisque; margaritâ albâ et iridescente.

Shell smooth, elliptical, compressed; valves rather thin; beaks slightly prominent and undulated at the beak; epidermis yellowish, with numerous rays; cardinal teeth small; lateral teeth long and straight; nacre white and iridescent.

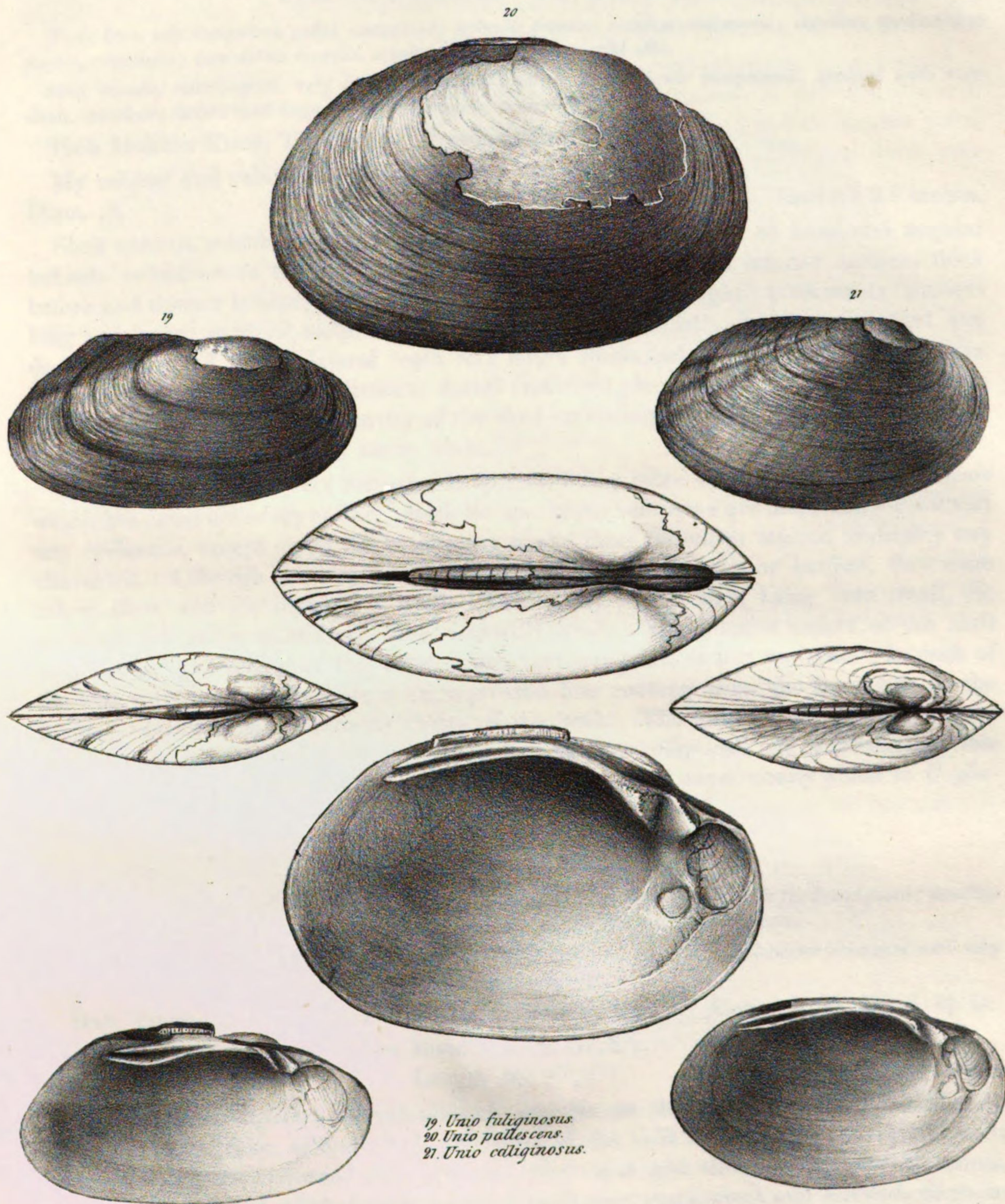
Hab. Rock River, Wisconsin. Captain Maryatt and B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. .6, Length .9, Breadth 1.5 inches.

Shell smooth, elliptical, compressed, very inequilateral; substance of the shell rather thin; beaks but slightly prominent and minutely undulate at the tips; ligament long and thin; epidermis yellowish, with numerous green rays nearly over the whole disk; cardinal teeth very small and pointed, double in the left and single in the right valve; lateral teeth long and straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices placed in the centre of the cavity of the beaks; cavity of the shell shallow; cavity of the beaks shallow and angular; nacre white.

Remarks.—Many years since Captain Maryatt sent me a box of shells from Wisconsin, in which there was a single imperfect specimen of this species. Although pretty well convinced that it was new and undescribed, I delayed inserting it in my former paper, in the hope of getting better specimens. Dr. Budd has submitted to my examination two perfect specimens, neither being eroded even on the beaks, which are finely undulated. It has some resemblance to *U. iris*, Nobis, but is a shorter and a more ponderous shell. It also bears some resemblance to the young of *U. crassus*, Say, and to *U. ellipsiformis*, Conrad, but differs from the latter in the form of the cardinal tooth, and in the beaks, which Mr. Conrad describes as *simple*, while in the *spatulatus* they are *undulate*.



From Nature on Stone by French

Sinclair's Lith. Phila.

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UNIO COMPRESSISSIMUS. Pl. VIII. Fig. 23.

Testâ lævi, subtriangulâri, valdè compressâ; valvulis crassis; natibus compressis; dentibus cardinalibus parvis, crenulatis; lateralibus magnis, crassis curvisque; margaritâ albâ.

Shell smooth, subtriangular, very much compressed; valves thick; beaks compressed; cardinal teeth very small, crenulate; lateral teeth large, thick, and curved; nacre white.

Hab. Holston River, Tennessee. President Estabrook.

My cabinet and cabinets of Mr. Estabrook and Dr. Griffith.

Diam. .8,

Length 1.6,

Breadth 2.6 inches.

Shell smooth, subtriangular, very much compressed, sub-arcuate at base, and angular behind; substance of the shell very thick, very irregular on the interior surface, thick before and thinner behind; beaks very much compressed and slightly prominent; ligament long and large; cardinal teeth very remarkably small, crenulate, single in the right and double in the left valve; lateral teeth very large, thick, and curved; anterior cicatrices distinct; posterior cicatrices distinct; dorsal cicatrices placed along the edge of the plain over the cavity of the beaks; cavity of the shell exceedingly shallow; cavity of the beaks very shallow and subangular; nacre white.

Remarks.—This is a very remarkable species, being more compressed than any *Unio* which has come under my notice. Both the specimens before me are unfortunately without any epidermis, except along the basal margin, and there too much injured to display any character. Although so completely eroded over the whole exterior surface, they were taken alive, and the interior is fresh. The cavity of the shell being very small, the included soft parts must have been unusually small. The interior aspect of the shell is peculiar, the surface of the nacre being very irregular, almost varicose. In each of the four valves before me there is an impressed line running from the inner side of the great posterior cicatrix up to the cavity of the beak. The form, in younger and more perfect specimens, will, I presume, be found to be more elliptical. It is likely that this species prefers a gravelly bottom and rapid current. It is most nearly allied to *U. phaeolus*, Hild.

UNIO PULVINULUS. Pl. VIII. Fig. 24.

Testâ lævi, ellipticâ, inflatâ; valvulis crassis; natibus prominentibus; epidermide tenebroso-fuscâ; dentibus cardinalibus minutissimis; lateralibus brevis rectisque; margaritâ albâ et iridescente.

Shell smooth, elliptical, inflated; valves thick; beaks prominent; epidermis dark-brown; cardinal teeth very small; lateral teeth short and straight; nacre white and iridescent.

Hab. Tuscaloosa and Coosawattee River, Murray County, Alab. B. W. Budd, M. D.

My cabinet and cabinets of Dr. Budd and Dr. Griffith.

Diam. .6,

Length .9,

Breadth 1.2 inches.

Shell smooth, elliptical, inflated, obtusely angular on the umbonal slope and slightly flattened on the sides, inequilateral; substance of the shell thick before and thin behind; beaks rather prominent and full; ligament very short and thin; epidermis dark-brown, smooth, shining and without rays; cardinal teeth very small, erect and pointed, single in the right and double in the left valve; lateral teeth short and straight; anterior cicatrices

confluent; posterior cicatrices distinct; dorsal cicatrices placed on the under side of the plate near the cardinal tooth; cavity of the shell deep and rounded; cavity of the beaks very shallow and rounded; nacre pearly white and very iridescent.

Remarks.—A single specimen only of this small species was procured by Dr. Budd. It is nearly allied to *U. castaneus*, Nobis, but may be easily distinguished from it by its not being oblique, and in having the umbonial slope angular. The cardinal teeth are also very much smaller.

ANODONTA TETRAGONA. Pl. VIII. Fig. 25.

Testa lævi, oblonga, valdè inflatâ; valvulis tenuibus; natibus prominulis; epidermide luteo-fuscâ, radiatâ; margaritâ cæruleo-albâ et iridescente.

Shell smooth, oblong, much inflated; valves thin; beaks somewhat prominent; epidermis yellowish-brown, rayed; nacre bluish-white and iridescent.

Hab. Alexandria, Louisiana. J. Hale, M. D.

My cabinet and cabinet of Dr. Hale.

Diam. 1.00,

Length 1.4,

Breadth 2.2 inches.

Shell smooth, oblong, very much inflated, subangular on the umbonial slope, inequilateral, incurved on the dorsal margin, angular behind; substance of the shell very thin; beaks somewhat prominent; ligament rather long and thin; epidermis yellowish-brown, with numerous indistinct rays; anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices immediately over the centre of the cavity of the beaks; cavity of the shell deep and rounded; cavity of the beak rather deep and angular; nacre bluish-white.

Remarks.—Among the shells sent to me by Dr. Hale, was a single specimen of this species, which, though nearly allied to Mr. Say's *edentula*, may be easily distinguished by its angular umbonial slope. The rudiments of a cardinal tooth are quite as prominent, if not more so, than in the *edentula*, which, when described by Mr. Say, he considered to belong to his genus *Alasmodonta*. The lines of growth in *tetragona* are distinct and distant, and the basal margin in the interior is somewhat rubiginose.

MARGARITANA MINOR. Pl. VIII. Fig. 26.

Testa lævi, triangulari, compressâ; valvulis tenuibus; natibus prominulis, ad apices undulatis; epidermide virido-luteâ; dentibus cardinalibus parvis; margaritâ cæruleo-albâ et iridescente.

Shell smooth, triangular, compressed; valves thin; beaks slightly prominent, undulated at the beaks; cardinal teeth small; nacre bluish-white and iridescent.

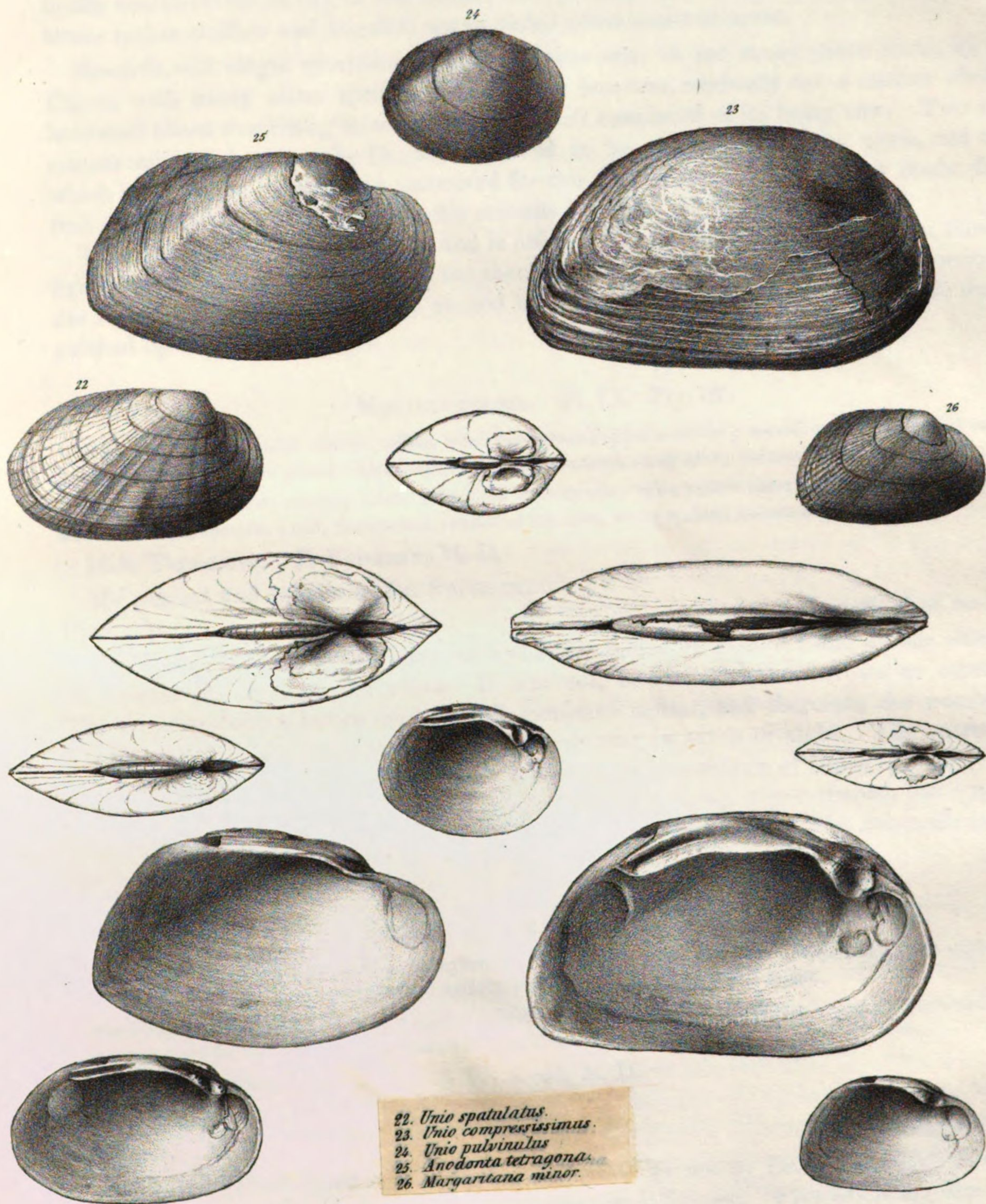
Hab. Tennessee—S. M. Edgar, M. D. North Carolina—B. W. Budd, M. D.

Diam. .5,

Length .7,

Breadth 1.2 inches.

Shell smooth, triangular, compressed, obtusely angular on the umbonial slope and flattened on the side, inequilateral; substance of the shell very thin and somewhat transparent, thicker before than behind; beaks slightly prominent and minutely undulate at the tips; ligament very short and very thin; epidermis greenish-yellow, greener on the posterior portion, with minute striæ; cardinal teeth very small and somewhat pointed;



22. *Unio spatulatus*.
 23. *Unio compressissimus*.
 24. *Unio pulvinulus*.
 25. *Anodonta tetragona*.
 26. *Margaritana minor*.

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anterior cicatrices confluent; posterior cicatrices confluent; dorsal cicatrices placed nearly in the centre of the cavity of the beaks; cavity of the shell very shallow; cavity of the beaks rather shallow and angular; nacre bluish-white and iridescent.

Remarks.—A single specimen of this shell was sent to me many years since, by Dr. Edgar, with many other species. As it was, however, evidently not a mature shell, I hesitated about describing it, although I was well convinced of its being new. Two specimens submitted to me by Dr. Budd, proved to be unquestionably the same, and one, which seems to be mature, has answered for this description. They are no doubt from that part of North Carolina where the streams flow into the Tennessee River.

This species is a very small one, and is allied to *M. deltoidea*, Nobis, but it is a thinner, lighter shell, and smaller. Two of the specimens before me have the posterior portion of the shell greenish, which colour is caused by minute, indistinct rays, which can be distinguished by close examination.

MELANIA SOLIDA. Pl. IX. Fig. 27.

Testâ lævi, obtuso-conicâ, crassâ, solidâ, tenebroso-cornéâ; spirâ subbrevis; suturis valdè impressis; anfractibus convexis; aperturâ parvâ, rhomboideâ, ad basim contortâ, intus albâ; columellâ inflectâ.

Shell smooth, obtusely conical, thick, solid, dark horn-colour; spire rather short; sutures much impressed; whorls convex; aperture small, rhomboidal, twisted at the base, white within; columella inflected.

Hab. Tennessee. E. Foreman, M. D.

My cabinet and cabinet of Dr. Foreman.

Diam. .5,

Length .9 of an inch.

Remarks.—This species in form somewhat resembles *M. alveare*, Con., on one side, and *M. canaliculata*, Say, on the other. It has not, however, either furrows or tubercles. The three specimens before me have all mutilated apices, and therefore the number of whorls cannot be correctly ascertained. There may be seven or eight. The aperture is about one-third the length of the shell. There is no appearance of bands in these. This is one of those species which have a twisted aperture, being auger-shaped, the outer lip being spread out, and the edge having a line of double curvature. The columella is very much twisted.

MELANIA PROTEUS. Pl. IX. Fig. 28.

Testâ lævi, subcylindraceâ, crassâ, pupæforme, luteo-cornéâ; spirâ elevatâ; suturis impressis; anfractibus septenis, subconvexis; aperturâ parvâ, rhomboideâ, ad basim angulatâ, intus albidâ.

Shell smooth, subcylindrical, thick, pupæform, yellowish horn-colour; spire elevated; sutures impressed; aperture small, rhomboidal, angular at the base, within whitish.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. .5,

Length 1 inch.

Remarks.—There were six specimens submitted to me by Dr. Budd, which I refer to the one species, although they present considerable difference. Five of the specimens are dead and bleached shells, and are of a light yellow or buff colour. The sixth is a fresh

and perfect specimen, with four small purple bands and a tuberculous shoulder, the tubercles being prolonged nearly into folds. Two others are indistinctly banded. Another has a tuberculous shoulder, and is disposed to be granulate. From these varieties arises the name given to it. The aperture is rather contracted, and about two-fifths the length of the shell.

MELANIA LUGUBRIS. Pl. IX. Fig. 29.

Testâ lævi, subacuto-conoideâ, subcrassâ, tenebroso-fuscâ; spirâ subelevatâ; suturis latè impressis; anfractibus planulatis; aperturâ parvâ, rhomboideâ, intus cæruleâ, infernè angulatâ.

Shell smooth, rather acutely conical, rather thick, dark-brown; spire rather elevated; sutures widely impressed; whorls flattened; aperture small, rhomboidal, within bluish, angular below.

Hab. Alabama. Major Le Conte.

Cabinet of Major Le Conte.

Diam. .37,

Length .85 of an inch.

Remarks.—A single specimen only of this species was received by Major Le Conte. There are no strong characters to separate it, but it is certainly different from any with which I am acquainted. Like the *canaliculata*, Say, it is auger-shaped on the right lip, but it is a much smaller shell, and without the sulcations of that species. There is an angle in the middle of the whorl which causes the sutures to be rather wide and marked. The apex being eroded, the number of whorls cannot be ascertained—probably eight. The aperture is about one-third the length of the shell.

MELANIA TORTA. Pl. IX. Fig. 30.

Testâ lævi, claviformi, subcrassâ, tenebroso-fuscâ; spirâ obtusâ; suturis impressis; anfractibus convexis; aperturâ grande, ellipticâ; columellâ tortâ.

Shell smooth, club-shaped, rather thick, dark-brown; spire obtuse; sutures impressed; whorls convex; aperture large, elliptical; columella twisted.

Hab. Big Creek, Laurence County, Tennessee. J. Clark.

My cabinet and cabinets of J. Clark and T. G. Lea.

Diam. .36,

Length .73 of an inch.

Remarks.—There were eight specimens of this species submitted to my examination by Mr. Clark, of Cincinnati. In general outline and size it very closely resembles *M. Warderiana*, (Nobis,) but differs from the specimens of that species which have come under my notice, in not being carinate, and in having a more twisted columella. The apices of the individuals now before me are slightly eroded, and the number of whorls may be seven or eight. One of the specimens has small folds near the apex, with decussating striæ. The inside is bluish-white—one of the specimens having a brown mark at the columella. The aperture is nearly one-half the length of the shell. Over the whole surface there are small, irregular ridges. The body whorl is very long.

MELANIA SPURCA. Pl. IX. Fig. 31.

Testâ lævi, pyramidatâ, subcrassâ, tenebroso-fuscâ; spirâ subelevatâ; suturis subimpressis; anfractibus octonis, planulatis; aperturâ parvâ, rhomboideâ, ad basim angulatâ, intus albidâ.

Shell smooth, pyramidal, somewhat thick, dark-brown; spire somewhat elevated; sutures slightly impressed; whorls eight, flattened; aperture small, rhomboidal, angular at the base, within white.

Hab. Alabama. Major Le Conte.

Cabinet of Major Le Conte.

Diam. .43,

Length .98 of an inch.

Remarks.—This species, of which only a single one was received by Major Le Conte, has no striking character, but cannot be placed with any other with which I am acquainted. It is very regular in its form, with a patulous, auger-shaped, outer lip, the margin of which is quite sinuous. The aperture is nearly one-third the length of the shell. It more nearly resembles *M. regularis*, (Nobis,) than any other species, but is not so large or solid a shell.

MELANIA ABRUPTA. Pl. IX. Fig. 32.

Testâ lævi, abbreviato-conoideâ, subcrassâ, luteâ; spirâ abbreviatâ; suturis linearibus; anfractibus septenis, planulatis; aperturâ magnâ, ovatâ, intus albidâ.

Shell smooth, short-conical, rather thick, yellowish; spire very short; sutures linear; whorls seven, flattened; aperture large, ovate, within whitish.

Hab. Alabama. Major Le Conte.

My cabinet and cabinet of Major Le Conte.

Diam. .3,

Length .64 of an inch.

Remarks.—This species in size and form is somewhat allied to *M. Nickliniana*, (Nobis,) but has the spire more elevated, and is not reddish. The two specimens before me have each two purple bands. This character may be frequent without being constant. The aperture is nearly half the length of the shell.

MELANIA BASALIS. Pl. IX. Fig. 33.

Testâ lævi, ellipticâ, subcrassâ, luteo-viridi, fasciatâ; spirâ curtâ, obtusâ; suturis impressis; anfractibus convexis; aperturâ ovato-elongatâ, ad basim acuto-angulatâ, intus albidâ.

Shell smooth, elliptical, rather thick, yellowish-green, banded; spire short, obtuse; sutures impressed; whorls convex; aperture ovately elongate, at the base acutely angular, within whitish.

Hab. Alabama. Major Le Conte.

My cabinet and cabinet of Major Le Conte.

Diam. .43,

Length .83 of an inch.

Remarks.—The elliptical form of this species is very remarkable. The spire is very short and obtuse. The apex of each of the two specimens before me is eroded, two whorls only being perfect. It has numerous purple bands, and the aperture is rather more than half the length of the shell. The base of the shell is extended and slightly retuse. One of the specimens, near to the superior part of the whorl, is disposed to swell into large tubercles. The epidermis is very smooth and polished.

MELANIA MODESTA. Pl. IX. Fig. 34.

Testâ lævi, conoideâ, subfusiformi, subtenui, nigrâ; spirâ subelevatâ; suturis linearibus; anfractibus planulatis, ultimo in medio angulato; aperturâ ellipticâ, subgrandi, intus tenebrosâ.

Shell smooth, conical, somewhat fusiform, rather thin, black; spire rather elevated; sutures linear; whorls flattened, the last angular in the middle; aperture elliptical, rather large, within dark.

Hab. Chatahoochee River, at Columbus, Georgia. S. Boykin, M. D.

My cabinet.

Diam. .28,

Length .67 of an inch.

Remarks.—A single specimen of this species came from Dr. Boykin, with some others, which I published some years since. This one was deferred in the hopes of getting more for comparison. In outline and colour it is very closely allied to a shell I described, from Tennessee, under the name of *tenebrosa*. It differs from it in having the aperture less distended, in having an angle on the middle of the whorl, and in being more fusiform. The apex being eroded, the number of whorls cannot be ascertained—there are about seven. The aperture is nearly one-half the length of the shell. The bands are so broad and dark as to give, in this specimen, a black appearance to the whole shell, except at the termination of the whorl, where the outer lip is yellow.

MELANIA HALEIANA. Pl. IX. Fig. 35.

Testâ lævi, acuto-conoideâ, subtenui, luteo-corneâ, politâ; spirâ elevatâ; suturis impressis; anfractibus novenis, convexis; aperturâ parvâ, ovatâ, ad basim subangulatâ, intus albidâ.

Shell smooth, acutely conical, rather thin, yellowish horn-colour, polished; spire elevated; sutures impressed; whorls nine, convex; aperture small, ovate, at the base angular, within whitish.

Hab. Alexandria, Louisiana. J. Hale, M. D.

My cabinet and cabinet of Dr. Hale.

Diam. .17,

Length .64 of an inch.

Remarks.—Among some fifty specimens of small *Melanixæ* sent by Dr. Hale, I found three species, nearly the whole, however, being of the above described. It has no very distinctive character, but cannot be placed with any species with which I am acquainted. It resembles some of the young varieties of *M. Virginica*, Say, but has the whorls more convex, and the aperture smaller. Four or five specimens are banded, and these have uniformly two bands, the inferior one being larger and much more distinctly marked. The first few whorls of the apex are carinate. The aperture is about one-fourth the length of the shell.

MELANIA PUMILA. Pl. IX. Fig. 36.

Testâ lævi, obtuso-conoideâ, subcrassâ, tenebroso-corneâ; spirâ depressâ; suturis valdè impressis; anfractibus subconvexis; aperturâ elongatâ, contractâ, ad basim contortâ, intus albidâ.

Shell smooth, obtusely conical; rather thick, dark horn-colour; spire depressed; sutures much impressed; whorls slightly convex; aperture elongate, contracted, twisted at the base, within whitish.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. .27,

Length .53 of an inch.

Remarks.—The two specimens before me are, in form and size, the same. They differ in one having two broad, purple bands, and the other being entirely without. On the inferior part of the whorl one has five rather distinct striæ, the other has these less distinct. The apex of each of these is eroded, and therefore the number of the whorls cannot be ascertained. This species is closely allied to *M. alveare*, Conrad, but is a much smaller shell, and in the two individuals before me there is no appearance of the tubercles which usually exist on the carina of the lower whorl of that species.

MELANIA ALEXANDRENSIS. Pl. IX. Fig. 37.

Testâ lævi, subacuto-conoideâ, subtenui, tenebroso-corneâ; spirâ subelevatâ; suturis subimpressis; anfractibus subplanulatis; aperturâ parvâ, subtrapezoideâ, intus albidâ.

Shell smooth, rather acutely conical, rather thin, dark horn-colour; spire rather elevated; sutures somewhat impressed; whorls rather flattened; aperture small and somewhat trapezoidal; within whitish.

Hab. Alexandria, Louisiana. J. Hale, M. D.

My cabinet and cabinet of Dr. Hale.

Diam. .22,

Length .58 of an inch.

Remarks.—There were two only of this species which came from Dr. Hale. It closely resembles the *Haleiana*, herein described, but has a less elevated spire, and the aperture differs, in being somewhat auger-shaped, the outer lip being more sinuous. The apex of each being broken, the number of whorls cannot be ascertained. The aperture is rather more than a fourth of the length of the shell.

MELANIA OVOIDEA. Pl. IX. Fig. 38.

Testâ lævi, ellipticâ, subcrassâ, corneâ; spirâ brevi; suturis vix impressis; anfractibus senis, subconvexis; aperturâ magnâ, subovatâ, intus albidâ.

Shell smooth, elliptical, rather thick, horn-colour; spire short; sutures slightly impressed; whorls six, slightly convex; aperture large; nearly ovate, within white.

Hab. Alexandria, Louisiana. J. Hale, M. D.

My cabinet and cabinet of Dr. Hale.

Diam. .2,

Length .44 of an inch.

Remarks.—A single specimen only of this little species was found among the shells sent by Dr. Hale. It differs entirely from the other two species, and approaches Mr. Say's *depygis*, but is smaller, and has a proportionately larger aperture. The aperture is quite one-half the length of the shell. The columella is somewhat thickened on the superior portion. In the specimen before me there are two broad, rather indistinct brown bands.

MELANIA AURICULÆFORMIS. Pl. IX. Fig. 39.

Testâ lævi, ellipticâ, subtenui, luteâ; spirâ depressâ; suturis impressis; anfractibus senis, subconvexis; aperturâ elongatâ, contractâ, ad basim rotundatâ, intus albidâ.

Shell smooth, elliptical, rather thin, yellow; spire depressed; sutures impressed; whorls six, slightly convex; aperture elongate, contracted, at the base rounded, within whitish.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

Cabinet of Dr. Budd.

Diam. .24,

Length .45 of an inch.

Remarks.—This species has very much the aspect of an *Auricula*. It is a very regularly formed and pretty shell, with a smooth, yellow, polished, epidermis. The aperture is about two-thirds the length of the shell, regularly rounded below and angular above, where there is a good deal of nacreous matter deposited.

MELANIA CARINO-COSTATA. Pl. IX. Fig. 40.

Testâ plicatâ, carinatâ, conoideâ, subtenui, vel luteâ vel castaneâ; spirâ subelevatâ; suturis sulcatis; anfractibus planulatis; aperturâ parvâ, ellipticâ; columellâ lævi.

Shell plicate, carinate, conical, rather thin, yellow or chestnut-coloured; spire somewhat elevated; sutures sulcate; whorls flattened; aperture small, elliptical; columella smooth.

Hab. Alabama—Major Le Conte. Tennessee—B. W. Budd, M. D.

My cabinet and cabinets of Major Le Conte and Dr. Budd.

Diam. .36,

Length .98 of an inch.

Remarks.—This is a species not easily confounded with any other known to me. The character of the ribs or folds is peculiar; they being arrested near the sutures by an abrupt carina, which has a smaller parallel one between it. The folds and the carinæ are conspicuous, being perfectly pronounced. Two of the six specimens before me are of a dark chestnut-brown, with the nacre of the interior quite rufous. One is more horn-coloured, having four bands, and the nacre whitish. The three others, all from Dr. Budd, are wax-yellow, the ribs less expressed, and the interior yellowish. The apex of each being broken, the number of whorls cannot be determined—I should think there were about eight. The inferior part of the whorl is smooth. The aperture is rather more than one-third the length of the shell.

MELANIA FILUM. Pl. IX. Fig. 41.

Testâ carinatâ, conoideâ, subtenui, tenebroso-corneâ; spirâ elevatâ; suturis impressis; anfractibus planulatis, in medio carinatis; aperturâ parvâ, rhomboideâ, ad basim angulatâ, intus albidâ; columellâ tortâ.

Shell carinate, conical, rather thin, dark horn-colour; spire elevated; sutures impressed; whorls flattened, carinate in the middle; aperture small, rhomboidal, angular at the base, within whitish, columella twisted.

Hab. Alabama. Major Le Conte.

Cabinet of Major Le Conte.

Diam. .47,

Length 1.06 inches.

Remarks.—A single specimen only of this species was submitted to me by Major Le Conte. It is very nearly allied to *M. elevata*, Say, but may be distinguished by its thread-like carina on the middle of the whorls, which, on the superior ones, presents a mere simple line. The outer lip is remarkably patulous, presenting the auger-shaped lip which belongs to a certain group of the *Melanix*. The apex being imperfect, the number of whorls cannot be ascertained. There are eight visible on this specimen, and it probably possesses ten in a perfect state. The aperture is about one-third the length of the shell.

MELANIA SPINALIS. Pl. IX. Fig. 42.

Testâ carinatâ, acuto-conoideâ, subtenui, luteâ, bifasciatâ; spirâ elevatâ; suturis exaratis; anfractibus planulatis; aperturâ parvâ, ovatâ, ad basim angulatâ, intus albidâ.

Shell carinate, acutely conical, rather thin, yellow, double-banded; spire elevated; sutures ploughed out; whorls flattened; aperture small, ovate, angular at the base, white within.

Hab. Alabama. Major Le Conte.

Cabinet of Major Le Conte.

Diam. .33,

Length .96 of an inch.

Remarks.—A single specimen only was submitted to me, and this not very perfect. It is a peculiar shell in its general appearance. The colour being of an unusually bright yellow, with two broad, distinct bands, one immediately above the middle of the whorl and the other below. The superior part of the whorl is darker than that below. The number of whorls cannot be given, the apex being broken. There were probably nine or ten. The aperture is about one quarter the length of the shell.

MELANIA PALLESCENS. Pl. IX. Fig. 43.

Testâ carinatâ, subacuto-conoideâ, subtenui, luteâ; spirâ subelevatâ; suturis impressis; anfractibus novenis, subconvexis; aperturâ parvâ, ovatâ, ad basim angulatâ, intus albidâ.

Shell carinate, rather acutely conical, somewhat thin, yellow; spire somewhat elevated; sutures impressed; whorls nine, rather convex; aperture small, ovate, angular at the base, within whitish.

Hab. Chester District, South Carolina. Professor Vanuxem.

My cabinet and cabinets of Professor Vanuxem and Major Le Conte.

Diam. 34,

Length .87 of an inch.

Remarks.—Many years since, my friend Professor Vanuxem gave me several specimens of this shell. Until recently, I was not satisfied that it was not merely a variety of *semicarinata*, Say, but I am disposed to think it differs too much to be considered merely a variety. It is a larger shell, with more whorls and more distinct carinations. The colour also differs, in being much lighter. A single specimen was among the shells sent from Major Le Conte, which, I suspect, is from Georgia, the locality not being certain. Those from Professor Vanuxem are from Major Green's farm. The aperture is less than one-third the length of the shell. All the specimens are without bands but one, which has four large, distinct ones.

MELANIA BUDDII. Pl. IX. Fig. 44.

Testâ striatâ, cylindrâ, subtenui, corneâ; spirâ attenuatâ; suturis impressis; anfractibus planulatis; aperturâ parvâ, ellipticâ, intus albidâ.

Shell striate, cylindrical, rather thin, horn-colour; spire attenuated; sutures impressed; whorls flattened; aperture small, elliptical, within whitish.

Hab. Tennessee? B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. .32,

Length 1.07 inches.

Remarks.—I have two specimens before me, both of which have seventeen revolving striæ on the lower whorl. They have also a single small band immediately below the middle of the body whorl, which is hidden on the superior whorls. Each of the specimens under examination has the apex broken, but I presume the number of whorls may reach to ten. Eight may be counted in one of these. Dr. Budd mentions, in a note, that "out of six, five have a band." The aperture is about one-fourth the length of the shell. This species is nearly allied to the striate variety of Mr. Say's *M. Virginica*, which he called *multistriata*. The *Buddii* may be distinguished by its being flattened on the whorls, in being more angular on the superior part of the whorls, and in being more attenuate.

MELANIA HARPA. Pl. IX. Fig. 45.

Testâ striatâ, conoideâ, subcrassâ, corneâ; spirâ subelevatâ; suturis subimpressis; anfractibus subconvexis; aperturâ parvâ, ellipticâ, ad basim angulatâ, intus albidâ.

Shell striate, conical, rather thick, horn-colour; spire rather elevated; sutures rather impressed; whorls somewhat convex; aperture small, elliptical, angular at the base, within whitish.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

Cabinet of Dr. Budd.

Diam. .42,

Length .8 of an inch.

Remarks.—I am not able to place this with any of the species submitted to me by Dr. Budd, and although a single specimen only is under examination, I have considered it new. It has some resemblance to *M. Haysiana*, but is not so cylindrical, and the aperture is not so narrow. It is transversely striate over the whole whorls. The length of the aperture is about two-fifths the length of the shell. The aperture being eroded, the number of whorls cannot be ascertained.

MELANIA ARCTATA. Pl. IX. Fig. 46.

Testâ striatâ, coarctatâ, crassâ, luteo-corneâ; spirâ conoideâ; suturis valde impressis; anfractibus senis, planulatis; aperturâ parvâ, rhomboideâ, intus albidâ.

Shell striate, compressed, thick, yellowish horn-colour; spire conical; sutures much impressed; whorls six, flattened; aperture small, rhomboidal, within whitish.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. .40,

Length .90 of an inch.

Remarks.—Among the seven specimens before me there is a good deal of difference. Some are darker than others. Several have the superior portion of the whorl rising into a ridge, quite nodose, while others are entirely without it. This species has more resemblance to *M. Haysiana* than any other which has come under my notice. It is not, however, so elliptical a shell, and the aperture is shorter. The aperture of the *arctata* is rather more than one-third the length of the shell; is obtusely angular below, and somewhat acutely angular above, where it is thickened.

MELANIA CREBRI-STRIATA. Pl. IX. Fig. 47.

Testâ transversè et crebri-ssimè striatâ, subfusiformi, crassâ, luteo-corneâ; spirâ obtusâ; suturis impressis; anfractibus subconvexis; aperturâ parvâ, subovatâ, ad basim angulatâ, intus albidâ; columellâ inflectâ superne incrassatâ.

Shell transversely and very closely striate, nearly fusiform, thick, yellowish horn-colour; spire obtuse; sutures impressed; whorls somewhat convex; aperture small, rather ovate, angular at the base, within whitish; columella inflected and thickened above.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. .40,

Length .76 of an inch.

Remarks.—This species is nearly allied to *M. impressa*, (Nobis,) but may be distinguished by its colour being yellowish, and by its coarser striæ. Its aperture also is smaller. The three specimens before me are very differently banded, one having nine, another three, and the last a rather broad one near the upper part of the whorl. These are only seen on the inside. The apex of each being eroded, the number of the whorls could not be accurately counted. Perhaps there are six. The striæ are so strong that they cause the edge of the outer lip to be crenate. The aperture is about two-fifths the length of the shell. On the superior whorls there are broad, slightly elevated, somewhat oblique ribs. The number of striæ on the three specimens before me are, respectively, sixteen, eighteen, and twenty.

MELANIA NOBILIS. Pl. IX. Fig. 48.

Testâ tuberculatâ, conoideâ, subcrassâ, luteo-corneâ; spirâ elevatâ; suturis irregulariter undulatis; anfractibus planulatis, in medio tuberculatis; aperturâ subgrandi, productâ, ad basim angulatâ et canaliculatâ, intus luteâ; columellâ tortâ.

Shell tuberculate, conical, rather thick, yellowish horn-colour; spire elevated; sutures irregularly undulate; whorls flattened, in the middle tuberculate; aperture rather large, elongated, angular, and channelled at the base, within yellowish; columella twisted.

Hab. Alabama. Major Le Conte.

Cabinet of Major Le Conte.

Diam. .72,

Length 1.7 inches.

Remarks.—This is among the finest of our American species. It is remarkable for its large size and extended sinus, which allies it to the genus *Io*, in which it might, with no great impropriety, be placed. The specimen before me has eight whorls, and the broken

apex would probably present about three more. The central ones have a dark band below, and are of a rather bright horn-colour above. In this specimen there is a rather coarse stria above the row of tubercles, and two smaller ones below. The margin of the outer lip is quite sinuous. It has some resemblance to *M. excurata*, Con., but may be distinguished by having a longer fuse, and in the position of the tubercles, which are not oblique, as described in that shell. When other specimens shall be observed it may be found to differ in some of the characters described above. Aperture rather more than one-third the length of the shell.

MELANIA PERNODOSA. Pl. IX. Fig. 49.

Testâ tuberculatâ, conoideâ, subcrassâ, corneâ, infernè striatâ; spirâ elevatâ, ad apicem costatâ; suturis undulatis; anfractibus octonis, planulatis, pernodosis; aperturâ parvâ, ad basim angulatâ et canaliculatâ, intus albidâ.

Shell tuberculate, conical, rather thick, horn-colour, striate below; spire elevated, ribbed on the apex; sutures undulated; whorls eight, flattened, tuberculate on the inferior portion; aperture small, angular, and canaliculate at the base, within white.

Hab. Cypress Creek, Florence, Alabama. T. R. Dutton.

My cabinet and cabinet of Mr. Dutton.

Diam. .4,

Length .68 of an inch.

Remarks.—This is a very remarkable species, having numerous, somewhat oblique tubercles, thickly set in a single row on the middle of the whorls. In the specimen before me, the only one I have seen, there is a dark spot between each of the tubercles. Towards the apex, the tubercles are more elongate and closely set, so as absolutely to become ribs across the whole of the whorl. The aperture is rather more than one-third the length of the shell. The striæ on the inferior half of the whorls are very regular and distinct, and number eight in this specimen.

ANCULOSA SQUALIDA. Pl. IX. Fig. 50.

Testâ lævi, vel rotundâ vel ellipticâ, percrassâ, tenebroso-corneâ; spirâ obtusâ; suturis vix impressis; aperturâ magnâ, subrotundâ, intus albidâ; columellâ percrassâ.

Shell smooth, rounded or elliptical, very thick, dark horn-colour; spire obtuse; sutures scarcely impressed; aperture small, nearly round, within white; columella very thick.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. .45,

Length .77 of an inch.

Remarks.—Dr. Budd submitted five specimens to me, and, as is frequently the case, in this genus, I do not find any two of the five exactly of the same outline. One is nearly round and presents but a single whorl. Another, a younger and more perfect specimen, is somewhat elliptical, and presents five whorls and a mammilate form. A third specimen is quite elliptical, the spire being obtusely conical. It is a very solid species, with a broad, thick columella, and a considerable callus above. All the five are obscurely banded. This species is allied to *A. prærosa*, Say, but differs somewhat in form, and has bands, not spotted lines. In some of the specimens the aperture is nearly the whole length of the shell.

ANCULOSA TINTINNABULUM. Pl. IX. Fig. 51.

Testâ lævi, obtuso-conicâ, campanulatâ, fasciatâ, percrassâ, luteâ; spirâ brevi; suturis impressis; anfractibus quinis, impressis; aperturâ rotundâ, subgrandi; columellâ percrassâ, supernè callosâ.

Shell smooth, obtusely conical, bell-shaped, banded, very thick, yellow; spire short; sutures impressed; whorls five, impressed; aperture rather large, round; columella very thick, callous above.

Hab. Tennessee—E. Foreman, M. D. Tuscaloosa, Alabama—B. W. Budd, M. D.

My cabinet and cabinets of Dr. Foreman and Dr. Budd.

Diam. .48,

Length .70 of an inch.

Remarks.—The peculiar, constricted lower whorl, giving a campanulate form to this shell, will distinguish it at once from other species. Six specimens before me are all yellow, with broad, brown bands. A single specimen is perfect enough in the spire to make out five whorls. Two of the specimens are white on the columella, and four are tinted with brown. The outline is very remarkable, in its campanulate form. The mouth, in the perfect specimen, is about two-thirds the length of the shell.

SCHIZOSTOMA* PAGODA. Pl. IX. Fig. 52.

Testâ carinatâ, conicâ, subcrassâ, tenebroso-corneâ; spirâ subobtusâ; suturis valdè impressis; anfractibus senis; fissurâ parvâ; aperturâ ellipticâ, intus albidâ; columellâ lævi.

Shell carinate, conical, rather thick, dark horn-colour; spire rather short; sutures very much impressed; whorls six; fissure small; aperture elliptical, within whitish; columella smooth.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. .35,

Length .75 of an inch.

Remarks.—Three of this interesting species are before me. They are very distinct, and may easily be known by the carina being very acute on the superior whorls, presenting the appearance of a Chinese pagoda. The lower whorl is slightly and irregularly striate. The fissure is not deep, but rather wide, being about one-fifth the length of the whorl. The columella at the base is rather angular. The aperture is rather more than one-third the length of the shell.

* In a paper read before the society December 16, 1842, I described two species belonging to the *Melanianæ*, with the pleurotomose character of a fissure in the outer lip. For one I proposed the name of *Melania excisa*, the other *Anculosa incisa*, and presuming that the shells bearing this characteristic, so remarkable in a *Melanian*, would require to be placed in a new genus, I then proposed the name of *Schizostoma*. Since then, five or six other species have been observed, and the genus may be thus characterized:

Testa vel conica vel fusiformis. Labrum supernè fissurâ. Apertura ovata. Columella lævis, incurva. Operculum

No operculum has come under my notice, but I can scarcely doubt that it will be found to be horny, and to resemble, in other respects, that of *Melania*.

SCHIZOSTOMA BUDDII. Pl. IX. Fig. 53.

Testâ striatâ, subfusiformi, crassâ, tenebroso-corneâ; spirâ obtuso-conicâ; suturis irregulariter impressis; anfractibus senis, subinflatis; fissurâ parvâ, obliquâ; aperturâ magnâ, rhomboideâ, intus albidâ; columellâ supernè callosâ.

Shell striate, subfusiform, thick, dark horn-coloured; spire obtusely conical; sutures irregularly impressed; whorls six, rather inflated; fissure small, oblique; aperture large, rhomboidal, whitish within; columella thickened above.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

My cabinet and cabinet of Dr. Budd.

Diam. .47,

Length .83 of an inch.

Remarks.—This is a robust shell, being thicker and heavier than any other species of this genus which I have observed. The aperture is nearly one-half the length of the shell. Two specimens were sent together by Dr. Budd, presuming they were the same. One, however, which is not quite a mature shell, has little or no fissure. The other, from which the description is made, has a wide but short fissure, and the margin of it opens obliquely.

SCHIZOSTOMA BABYLONICUM. Pl. IX. Fig. 54.

Testâ striatâ, subfusiformi, subcrassâ, castaneâ; spirâ obtuso-conicâ; suturis impressis; anfractibus planulatis; fissurâ parvâ; aperturâ magnâ, ellipticâ, intus subcarneâ; columellâ lævi, ad basim angulatâ, supernè incrassatâ.

Shell striate, somewhat fusiform, rather thick, chestnut-coloured; spire obtusely conical; sutures impressed; whorls flattened; fissure small; aperture large, elliptical, somewhat flesh-coloured within; columella smooth, angular at the base, thickened above.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

Cabinet of Dr. Budd.

Diam. .48,

Length 1 inch.

Remarks.—A single specimen only of this species was submitted to me. It differs from the other described species in being angular at the superior portion of the whorl along the lower margin of the fissure, making quite a shoulder, and giving it the Babylonian appearance. The fissure is wide, but not deep. The apex being much eroded, the number of whorls could not be ascertained. The aperture is nearly half the length of the shell. The deposit on the columella in this individual does not cover the perforation. In others, this may differ. The outer lip is quite patulous.

SCHIZOSTOMA CONSTRICTUM. Pl. IX. Fig. 55.

Testâ lævi, subfusiformi, subtenui, luteo-corneâ; spirâ obtusâ; suturis impressis; anfractibus coarctatis; fissurâ submagnâ, subobliquâ; aperturâ magnâ, ellipticâ, intus albidâ; columellâ lævi, ad basim subangulatâ.

Shell smooth, somewhat fusiform, rather thin, yellowish horn-colour; spire obtuse; sutures impressed; whorls constricted; fissure rather large, somewhat oblique; aperture large, elliptical, whitish within; columella smooth, subangular at the base.

MELANIA &c.



- | | | | |
|---------------------------|--------------------------------|--------------------------------|----------------------------------|
| 27 <i>M. solida</i> | 35 <i>M. Haleiana</i> | 43 <i>M. pallescens</i> | 51 <i>A. tintinnabulum</i> |
| 28 <i>Proteus</i> | 36 <i>pumila</i> | 44 <i>Buddii</i> | 52 <i>S. pagoda</i> |
| 29 <i>lugubris</i> | 37 <i>Alexandrensis</i> | 45 <i>harpa</i> | 53 <i>Buddii</i> |
| 30 <i>torta</i> | 38 <i>ovoides</i> | 46 <i>arclata</i> | 54 <i>Babylonicum</i> |
| 31 <i>spurea</i> | 39 <i>auriculæformis</i> | 47 <i>crebre striata</i> | 55 <i>constrictum</i> |
| 32 <i>abrupta</i> | 40 <i>carino costata</i> | 48 <i>nobilis</i> | 56 <i>funiculatum</i> |
| 33 <i>basalis</i> | 41 <i>filum</i> | 49 <i>pernodosa</i> | 57 <i>laciniatum</i> |
| 34 <i>modesta</i> | 42 <i>spinalis</i> | 50 <i>A. squalida</i> | 58 <i>P. Haleiana</i> |

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

Cabinet of Dr. Budd.

Diam. .43,

Length .75 of an inch.

Remarks.—A single specimen only of this species was among the shells submitted to me by Dr. Budd. It differs from those I have seen in having a rather broad channel impressed immediately above the centre of the whorl. This character may, however, differ in other individuals. The fissure is rather wide, but not deep. The apex being eroded, the number of whorls could not be ascertained. The aperture is about one-half the length of the shell. There is no appearance of bands about this specimen.

SCHIZOSTOMA FUNICULATUM. Pl. IX. Fig. 56.

Testâ striatâ, ellipticâ, subcrassâ, castaneâ; spirâ obtusâ; suturis valdè impressis; anfractibus convexis; fissurâ submagnâ, obliquâ; aperturâ magnâ, ellipticâ; columellâ supernè callosâ.

Shell striate, elliptical, rather thick, chestnut-coloured; spire obtuse; sutures much impressed; whorls convex; fissure rather large, oblique; aperture large, elliptical; columella thickened above.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

Cabinet of Dr. Budd.

Diam. .4,

Length .66 of an inch.

Remarks.—A single specimen only was obtained by Dr. Budd of this species. It is short, stout, and almost subrotund. It has two elevated, cord-like lines, revolving on the whorls. One immediately under the suture, the other below that again. The aperture is more than half the length of the shell. The apex is so much eroded as to prevent the number of whorls being ascertained. There are about six.

SCHIZOSTOMA LACINIATUM. Pl. IX. Fig. 57.

Testâ lævi, obtuso-conicâ, subcrassâ, fasciatâ, luteo-corneâ; spirâ obtusâ; suturis exaratis; anfractibus convexis; fissurâ profundâ; aperturâ ellipticâ, intus albidâ; columellâ lævi, supernè incrassatâ.

Shell smooth, obtusely conical, rather thick, banded, yellowish horn-colour; spire obtuse; sutures excavated; whorls convex; fissure deep; aperture elliptical, whitish within; columella smooth, thickened above.

Hab. Tuscaloosa, Alabama. B. W. Budd, M. D.

Cabinet of Dr. Budd.

Diam. .25,

Length .45 of an inch.

Remarks.—This is the smallest species I have seen. The mouth and fissure of this specimen are perfect, but the apex is much eroded, and the number of whorls cannot therefore be ascertained. There are four bands very distinctly marked on the inside. The aperture appears to be about one-half the length of the shell. The fissure is very narrow and remarkably deep, extending nearly one-fourth round the whorl. The cicatrix along the suture is of a lighter colour. The marks of growth are distinct, and give a lacinate appearance.

PALUDINA HALEIANA. Pl. IX. Fig. 58.

Testâ lævi, ventricos-conoideâ, subtenui, rufo-corneâ, imperforatâ; spirâ brevi; suturis valdè impressis; anfractibus quaternis, subconvexis; aperturâ magnâ, subrotundâ, cæruleâ.

Shell smooth, ventricosely conical, rather thin, reddish horn-colour, imperforate; spire short; sutures much impressed; whorls four, nearly convex; aperture large, nearly round, bluish.

Hab. Alexandria, Louisiana. J. Hale, M. D.

My cabinet and cabinet of Dr. Hale.

Diam. .4,

Length .55 of an inch.

Remarks.—This species is nearly allied to the *P. Troostiana*, (Nobis,) but is rather smaller, of a darker colour, not quite so rotund, and imperforate. These differences would distinguish it without difficulty. In the *Haleiana* there is a disposition in most of the specimens to a compression below the sutures. This makes quite a shoulder at the sutures and prevents the mouth from being regular.

NOTE.—Since the first sheet of this paper was printed off, two more *Melania*, by Dunker, have been added to the list, making in all three hundred and ninety-seven.

CATALOGUE OF THE GENUS MELANIA, RECENT AND FOSSIL.

<i>Melania abjecta</i> ,	Haldeman.	<i>Melania annulata</i> ,	Ferussac.
“ <i>abrupta</i> ,	Lea.	“ <i>anthracina</i> ,	Von Den Busch.
“ <i>acicula</i> , (Eulima,)	Philippi.	“ <i>approxima</i> ,	Haldeman.
“ <i>aculeus</i> ,	Lea.	“ <i>arata</i> ,	Lea.
“ <i>acuminata</i> ,	Dunker.	“ <i>arctata</i> ,	Lea.
“ <i>acuto-carinata</i> ,	Lea.	“ <i>arcuata</i> ,	Zool. Soc., 1843.
“ <i>acuta</i> ,	Lea.	“ <i>armigera</i> ,	Say.
“ <i>adpersa</i> ,	Torschel.	“ <i>asperata</i> ,	Lamarck.
“ <i>Ægyptiaca</i> ,	Benson.	“ <i>aspirans</i> ,	Hinds.
“ <i>æqualis</i> ,	Hald.	“ <i>attenuata</i> ,	Woodward. f.
“ <i>Æthiops</i> ,	Beck.	“ <i>ater</i> ,	Rich.
“ <i>afra</i> ,	Zeigler.	“ <i>auricularis</i> ,	Ferussac.
“ <i>agnata</i> ,	Pfeiffer.	“ <i>auriculæformis</i> ,	Lea.
“ <i>Alexandrensis</i> ,	Lea.	“ <i>auricula</i> ,	Grateloup. f.
“ <i>altilis</i> ,	Lea.	“ <i>aurita</i> , (Pirena, Lam.,)	Rang.
“ <i>alveare</i> ,	Conrad.	“ <i>auriscalpium</i> ,	Menke.
“ <i>amarula</i> ,	Lamarck.	“ <i>Babylonica</i> ,	Lea.
“ <i>angulosa</i> ,	Menke.	“ <i>basalis</i> ,	Lea.
“ <i>annulifera</i> ,	Conrad.	“ <i>Batana</i> ,	Gould.

<i>Melania bella-crenata</i> ,	Haldeman.	<i>Melania costata</i> ,	Quoy, Desh.
" <i>bella</i> ,	Conrad.	" <i>costata</i> ,	Ravenel.
" <i>bellicosa</i> ,	Hinds.	" <i>costata</i> ,	Sowerby. <i>f.</i>
" <i>bicarinata</i> ,	Grateloup.	" <i>costata</i> ,	Quoy, Desh.
" <i>bilineata</i> ,	Gold, Pfeif. <i>f.</i>	" <i>costellata</i> ,	Lamarck. <i>f.</i>
" <i>bilineata</i> ,	Pfeif. <i>f.</i>	" <i>costifera</i> ,	Haldeman.
" <i>bitæniata</i> ,	Conrad.	" <i>costulata</i> ,	Lea.
" <i>blanda</i> ,	Lea.	" <i>costulata</i> ,	Mühlfeld.
" <i>Boscii</i> , (Eulima,)	Phil.	" <i>crassa</i> ,	Von Den Busch.
" <i>Boykiniana</i> ,	Lea.	" <i>crassa</i> ,	Parreyss.
" <i>breviformis</i> ,	Parreyss.	" <i>crebri-costata</i> ,	Lea.
" <i>brevis</i> ,	Lea.	" <i>crebri-striata</i> ,	Lea.
" <i>Brocchii</i> ,	Brown.	" <i>crenulata</i> ,	Deshayes.
" <i>buccinalis</i> ,	Deshayes.	" <i>cruentata</i> ,	Menke.
" <i>Buddii</i> ,	Lea.	" <i>Curreyana</i> ,	Lea.
" <i>Byronensis</i> ,	?	" <i>curta</i> ,	Haldeman.
" <i>caliginosa</i> ,	Lea.	" <i>curta</i> ,	Menke.
" <i>Cambessedesii</i> , { <i>Eulima elegantissima</i> , Pay. } Pay.		" <i>curvata</i> ,	Lea.
		" <i>curvicosta</i> ,	Deshayes. <i>f.</i>
" <i>campanella</i> ,	Philippi.	" <i>Cuvieri</i> ,	Deshayes. <i>f.</i>
" <i>canaliculata</i> ,	Say.	" <i>cylindracea</i> ,	Conrad.
" <i>cancellata</i> ,	Say.	" <i>decora</i> ,	Lea.
" <i>cancellata</i> ,	(?)	" <i>decollata</i> ,	Lamarck.
" <i>canicularis</i> ,	Lamarck.	" <i>decussata</i> ,	Deshayes. <i>f.</i>
" <i>carinifera</i> ,	Lamarck.	" <i>Dembea</i> ,	Ruppell.
" <i>carino-costata</i> ,	Lea.	" <i>depygis</i> ,	Say.
" <i>carinata</i> ,	Ravenel.	" <i>Deshaysiana</i> ,	Lea.
" <i>Carolinæ</i> ,	Gray.	" <i>dilatata</i> ,	Con.
" <i>castanea</i> ,	Lea.	" <i>distorta</i> , (Eulima,)	Defrance. <i>f.</i>
" <i>catenarea</i> ,	Say.	" <i>dubia</i> ,	Lamarck.
" <i>catenoides</i> ,	Lea.	" <i>dubiosa</i> ,	Lea.
" <i>Celebensis</i> ,	Quoy, Desh.	" <i>Duisabonis</i> ,	Grateloup.
" <i>Cincinnatiensis</i> ,	Lea.	" <i>Duttoniana</i> ,	Lea.
" <i>circincta</i> ,	Lea.	" <i>ebenum</i> ,	Lea.
" <i>clathrata</i> ,	Grat. <i>f.</i>	" <i>eburnea</i> ,	Mühlfeld. (?)
" <i>clava</i> ,	Lamarck. <i>f.</i>	" <i>Edgariana</i> ,	Lea.
" <i>clavæformis</i> ,	Lea.	" <i>elegans</i> ,	Schmidt.
" <i>clavula</i> ,	Deshayes. <i>f.</i>	" <i>elevata</i> ,	Say.
" <i>coarctata</i> ,	Lamarck.	" <i>elongata</i> ,	Lea.
" <i>cochlearella</i> , (Rissoa,)	Lamarck. <i>f.</i>	" <i>erodes</i> ,	Zeigler.
" <i>coffea</i> ,	Philippi.	" <i>erosa</i> ,	Lesson.
" <i>columella</i> ,	Lea.	" <i>erythrostoma</i> ,	Quoy, Desh.
" <i>comma</i> ,	Conrad.	" <i>exarata</i> ,	Menke.
" <i>concinna</i> ,	Lea.	" <i>exarata</i> ,	Lea.
" <i>congesta</i> ,	Say.	" <i>excisa</i> ,	Lea.
" <i>conica</i> ,	Say.	" <i>excurata</i> ,	Con.
" <i>conica</i> ,	Gray.	" <i>exilis</i> ,	Haldeman.
" <i>constricta</i> ,	Lamarck. <i>f.</i>	" <i>expansa</i> ,	Lea.
" <i>cornea</i> ,	Kruster.	" <i>fasciata</i> ,	Sowerby. <i>f.</i>
" <i>coronata</i> ,	Von Den Busch.	" <i>fasciata</i> ,	Von Den Busch.
" <i>coronata</i> ,	Kruster.	" <i>fasciata</i> ,	Menke.
" <i>corrugata</i> ,	Lamarck.	" <i>fasciolata</i> ,	Lamarck.

<i>Melania figurata</i> ,	Hinds.	<i>Melania integra</i> ,	Say.
" <i>flum</i> ,	Lea.	" <i>intermedia</i> ,	Von Den Busch.
" <i>flamigera</i> ,	Dunker.	" <i>interrupta</i> ,	Haldeman.
" <i>flammulata</i> ,	Von Den Busch.	" <i>intersita</i> ,	Haldeman.
" <i>flavida</i> ,	Dunker.	" <i>isogona</i> ,	Say.
" <i>florata</i> ,	Hinds.	" <i>Jayana</i> ,	Lea.
" <i>Florentiana</i> ,	Lea.	" <i>Kirtlandiana</i> ,	Lea.
" <i>fluminalis</i> ,	Mühlfeld.	" <i>lactea</i> ,	Lamarck. <i>f.</i>
" <i>Foremani</i> ,	Lea.	" <i>læta</i> ,	Jay.
" <i>formosa</i> ,	Conrad.	" <i>lævigata</i> ,	Deshayes. <i>f.</i>
" <i>fragilis</i> ,	Lamarck.	" <i>lævis</i> ,	Lea.
" <i>Frethii</i> ,	Gray.	" <i>lævissima</i> ,	Sowerby.
" <i>fulgurans</i> ,	Hinds.	" <i>laqueata</i> ,	Say.
" <i>fuliginosa</i> ,	Lea.	" <i>Largillierti</i> ,	Philippi.
" <i>fumosa</i> ,	Hinds.	" <i>latebrosa</i> ,	Hinds.
" <i>funiculus</i> ,	Quoy., Desh.	" <i>Lecontiana</i> ,	Lea.
" <i>fusca</i> ,	Rang.	" <i>ligata</i> ,	Menke.
" <i>fusca</i> ,	Philippi.	" <i>lima</i> ,	Conrad.
" <i>fuscata</i> ,	Deshayes.	" <i>lineata</i> ,	Sowerby. <i>f.</i>
" <i>fusiformis</i> ,	Lea.	" <i>lineata</i> ,	Troschel.
" <i>gaudiosa</i> ,	Hinds.	" <i>lineolata</i> ,	Gray.
" <i>glabra</i> ,	Lea.	" <i>livescens</i> ,	Menke.
" <i>glabrata</i> ,	Mühlfeld.	" <i>lirata</i> ,	Menke.
" <i>glans</i> ,	Von Den Busch.	" <i>luctuosa</i> ,	Hinds.
" <i>globula</i> ,	Lea.	" <i>lugubris</i> ,	Lea.
" <i>globulosa</i> ,	Grey.	" <i>macilenta</i> ,	Menke.
" <i>gracilis</i> ,	Lea.	" <i>maculata</i> ,	Parreyss.
" <i>gracilis</i> ,	Anthony, Hald.	" <i>Madagascariensis</i> ,	Grateloup.
" <i>grana</i> ,	Von Den Busch.	" <i>magnifica</i> ,	Conrad.
" <i>granifera</i> ,	Lamarck.	" <i>marginata</i> ,	Lamarck. <i>f.</i>
" <i>Haleiana</i> ,	Lea.	" <i>Matoni</i> ,	Gray.
" <i>harpa</i> ,	Lea.	" <i>melanoides</i> ,	Conrad.
" <i>harpæformis</i> ,	Hock, Desh. <i>f.</i>	" <i>minima</i> ,	Sowerby. <i>f.</i>
" <i>harpula</i> ,	Dunker.	" <i>mitra</i> ,	Dunker.
" <i>Haysiana</i> ,	Lea.	" <i>mitra</i> ,	Desh., Lam.
" <i>Heddingtonensis</i> ,	Sowerby. <i>f.</i>	" <i>modesta</i> ,	Lea.
" <i>Helvetica</i> ,	Michelin.	" <i>mœsta</i> ,	Hinds.
" <i>Henriettæ</i> ,	Gray.	" <i>Molluccensis</i> ,	Quoy, Desh.
" <i>Hildrethiana</i> ,	Lea.	" <i>monozonalis</i> ,	Lea.
" <i>Hollandri</i> ,	Ferussac.	" <i>multilata</i> ,	Say.
" <i>Holstonia</i> ,	Lea.	" <i>multilineata</i> ,	Say.
" <i>hordacea</i> ,	Lamarck. <i>f.</i>	" <i>mutans</i> ,	Gould.
" <i>Hugelii</i> , (<i>Melanopsis</i> ?)	Philippi.	" <i>nassula</i> ,	Conrad.
" <i>Hydei</i> ,	Con.	" <i>Niagarensis</i> ,	Lea.
" <i>impressa</i> ,	Lea.	" <i>Nickliniana</i> ,	Lea.
" <i>inæquata</i> ,	Fischer de Valdh.	" <i>nitens</i> ,	Lea.
" <i>incerta</i> ,	Grat. <i>f.</i>	" <i>nitida</i> ,	Lamarck.
" <i>inermis</i> ,	Gray.	" <i>nobilis</i> ,	Lea.
" <i>inflata</i> ,	Lea.	" <i>nodulosa</i> ,	Lea.
" <i>inflata</i> ,	Haldeman.	" <i>nupera</i> ,	Say.
" <i>inflexa</i> ,	Phillips. <i>f.</i>	" <i>obovata</i> ,	Say.
" <i>inquinata</i> ,	Defrance. <i>f.</i>	" <i>obtusa</i> ,	Lea.

<i>Melania occata</i> ,	Hinds.	<i>Melania Rogersii</i> ,	Conrad.
" <i>occidentalis</i> ,	Lea.	" <i>rufa</i> ,	Philippi.
" <i>Ocoeensis</i> ,	Lea.	" <i>rufescens</i> ,	Lea.
" <i>oliva</i> ,	Lea.	" <i>rufula</i> ,	Haldeman.
" <i>olivata</i> ,	Conrad.	" <i>rugosa</i> ,	Lea.
" <i>olivula</i> ,	Conrad.	" <i>salebrosa</i> ,	Conrad.
" <i>Ordiana</i> ,	Lea.	" <i>Sayii</i> ,	Ward.
" <i>ornata</i> ,	Von Den Busch.	" <i>scabra</i> ,	Fer., Desh.
" <i>ornata</i> ,	Grat. f.	" <i>scalaria</i> ,	Philippi.
" <i>ovalis</i> ,	Lea.	" <i>scalarina</i> ,	Pfeiffer.
" <i>ovoidea</i> ,	Lea.	" <i>scalaris</i> ,	Spix & Wagner.
" <i>ovularis</i> ,	Menke.	" <i>Scheideana</i> ,	Philippi.
" <i>Owenii</i> ,	Gray.	" <i>scolopaceus</i> ,	Lamarck.
" <i>pallescens</i> ,	Lea.	" <i>semicarinata</i> ,	Say.
" <i>pallida</i> , (Chemnitzia,)	Philippi.	" <i>semicancellata</i> ,	Von Den Busch.
" <i>Papuensis</i> ,	Quoy, Desh.	" <i>semicostata</i> ,	Conrad.
" <i>perfusca</i> ,	Lea.	" <i>semidecussata</i> ,	Lamarck. f.
" <i>pernodosa</i> ,	Lea.	" <i>semigranosa</i> ,	Von Den Busch.
" <i>perpinguis</i> ,	Hinds.	" <i>semiplicata</i> ,	Lamarck. f.
" <i>picta</i> ,	Lea.	" <i>semistriata</i> ,	Lamarck. f.
" <i>picta</i> ,	Hinds.	" <i>setosa</i> ,	Swainson, Desh.
" <i>pilula</i> ,	Lea.	" <i>siccata</i> ,	Von Den Busch.
" <i>plicata</i> ,	Menke.	" <i>simplex</i> ,	Say.
" <i>plicata</i> ,	Lea.	" <i>solida</i> ,	Lea.
" <i>plicatula</i> ,	Desh.	" <i>soluta</i> ,	Philippi.
" <i>plicifera</i> ,	Lea.	" <i>sordida</i> ,	Lea.
" <i>pluristriata</i> ,	Say.	" <i>spina</i> ,	Grat. f.
" <i>Plutonis</i> ,	Hinds.	" <i>spinalis</i> ,	Lea.
" <i>polita</i> ,	Desh. f.	" <i>spinifera</i> ,	Adams.
" <i>portalis</i> ,	Rossmäessler.	" <i>spinulosa</i> ,	Lamarck, Phil.
" <i>Potosiensis</i> ,	Lea.	" <i>Spixiana</i> ,	Lea.
" <i>prærosa</i> , (Anculosa,)	Say.	" <i>spurca</i> ,	Lea.
" <i>prasinata</i> ,	Con.	" <i>striata</i> ,	Sowerby. f.
" <i>producta</i> ,	Lea.	" <i>striatula</i> ,	Lea.
" <i>Proteus</i> ,	Lea.	" <i>strigilata</i> ,	Dunker.
" <i>proxima</i> ,	Say.	" <i>strigosa</i> ,	Lea.
" <i>pugilis</i> ,	Hinds.	" <i>stygia</i> ,	Say.
" <i>pulchella</i> ,	Anthony.	" <i>subcarinata</i> ,	Gray.
" <i>pumila</i> ,	Lea.	" <i>subcylindracea</i> ,	Lea.
" <i>punctata</i> ,	Lamarck.	" <i>subglobosa</i> ,	Say.
" <i>pygmæa</i> ,	Hoch., Desh.	" <i>subsolida</i> ,	Lea.
" <i>pyramis</i> ,	Benson.	" <i>substricta</i> ,	Haldeman.
" <i>pyramidata</i> ,	Sowerby. f.	" <i>subulata</i> ,	Lamarck.
" <i>pyramidata</i> ,	Hinds.	" <i>subularis</i> ,	Lea.
" <i>pyrenella</i> ,	Conrad.	" <i>sulcata</i> ,	Sowerby. f.
" <i>quadriseriata</i> ,	Gray.	" <i>sulcosa</i> ,	Lea.
" <i>Rangii</i> ,	Deshayes.	" <i>sulcosa</i> ,	Menke.
" <i>regularis</i> ,	Lea.	" <i>suturalis</i> ,	Haldeman.
" <i>Reirvardii</i> ,	Van Haan.	" <i>symmetrica</i> ,	Haldeman.
" <i>retusa</i> ,	Gray.	" <i>Taitiana</i> ,	Lea.
" <i>Riqueti</i> ,	Grateloup.	" <i>Tarbelliana</i> ,	Grateloup. f.
" <i>robusta</i> ,	Lea.	" <i>tenebrosa</i> ,	Lea.

Melania terebella,	Mühlfeld.	Melania tympanorum, (Pirena aurita, Lam.,) Deshayes.	
" terebra,	Von Den Busch.	" tympanotonus,	Deshayes.
" terebralis,	Lea.	" uncialis,	Haldeman.
" teres,	Lea.	" undulata,	Say.
" testudinaria,	Von Den Busch.	" uniformis,	Quoy, Desh.
" thiarella,	Lamarck.	" Vanuxemiana,	Lea.
" Tirouri,	Ferussac.	" variabilis,	Defrance. f.
" torquata,	Lea.	" varicosa,	Ward.
" torquata,	Von Den Busch.	" varicosa,	Troschell.
" torta,	Lea.	" variegata,	Menke.
" tricarinata,	Woodward. f.	" ventricosa,	Rang.
" trilineata,	Say.	" venusta,	Lea.
" triticea,	Ferussac. f.	" verrucosa,	Hinds.
" trochiformis,	Conrad.	" vestita,	Conrad.
" Troostiana,	Lea.	" vibex,	Mühlfeld.
" truncata,	Lamarck.	" virgata,	Lea.
" truncatula,	Lamarck.	" Virginica,	Say.
" tuberculata,	Muller. (?)	" virgulata,	Fer., Desh.
" tuberculata,	Von Den Busch.	" viridis,	Lea.
" tuberculata,	Lea.	" vittata,	Philippi. f.
" tuberculata,	Spix & Wagner.	" Warderiana,	Lea.
" tuberculosa,	Rang.	" Winteri,	Von Den Busch.
" turgida,	Lea.	" zonata,	Von Den Busch.
" turritella,	Dunker.	" Zinkeni,	Dunker.

Since the preceding sheet was put to press, I have received from Dr. Philippi some numbers of his "Abbildungen und Beschreibungen neuer oder wenig gekannter Conchylien," in which I find the following *Melaniae* not in the above catalogue. They increase the list of species to four hundred and seventeen.

Melania (Melanopsis,) Braziliensis, .	Moricand.	Melania (Melanopsis,) Parreyssii, .	Von Mühlfeld.
" cingulata,	Jonas.	" porcata,	Jonas.
" costata,	Olivier.	" pyramis,	Von Den Busch.
" (Melanopsis,) crenocarina, .	Moricand.	" rivularis,	Philippi.
" Gruneri,	Jonas.	" scabrella,	Philippi.
" (Melanopsis,) Helena, .	Meder.	" semicostata,	Philippi.
" inhonesta,	Von Den Busch.	" subnodosa,	Philippi.
" Javanica,	Von Den Busch.	" suturalis,	Philippi.
" (Melanopsis,) Kotchy, .	Von Den Busch.	" turgidula,	Philippi.
" (?) obesa,	Philippi.	" (Melanopsis,) variabilis, .	Von Den Busch.

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78	" <i>constricta</i>	50	" <i>truncatella</i>	50	" <i>truncatella</i>
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